otential Target Cost (Remaining as of February, 2015) — Current Year Dollars based on Man-Hours and Current Labor Costs Unless Otherwise Noted

evision 1.0 Prepared by KJB/WMC/KRK February 24, 2015

	Craft Labor Cost								100% $'s
	Direct Craft Labor	13,106,633	Direct Target MH (Budget)						
		1.55	Performance Factor (Current ITD PF, Recent PF's Closer to 2.0)						
		20,315,281	Direct Target MH (Actual)		$	33.00 /MH	$	670,404,278	
	Indirect Craft Labor	0.97	Indirect /Direct Ratio (Keep Current# of Ind. w/ Increase of Direct to 1500 in 18 months, down from 1.34)						
		19,705,823	Indirect Target MH (Actual)		$	30.00 /MH	$	591,174,681	Portion is Delay Cost
	Total Craft Labor Hours	40,021,104	MH						
	Craft Labor Perdiem	70%	Craft On Perdiem						
		$ 9.80	/Hr				$	274,544,773	Portion is Delay Cost
	Small Tools/Consumables/PPE Mark-up for Craft	6%	of Total Labor Cost				$	75,694,738	
	How Many Craft Required?								
	Months Remaining for Unit 2 (2/15 - 6/18) (40%)	40	220 MH/Mth	16,008,442 MH		1819	FTE Required to Complete		
	Months Remaining for Unit 3 (2/15 - 6/19) (60%)	52	220	24,012,662 MH		2099	FTE Required to Complete		
						3918	FTE Required to Complete		
I	FNM Labor								
	FNM Proj.Ratio FNM Hour to 1 Direct Craft Hour	0.60	12,189,169 MH	Wage	$	46.97 /MH	$	572,510,577	Portion is Delay Cost
				Mark-up		0.7	$	400,757,404	Portion is Delay Cost
	Months Remaining in Project	52	220 MH/Mth			1065	FTE Required to Complete		
	PPE Mark Up for FNM	1%	of FNM Cost				$	5,725,106	
II	Misc. Target Expenses								
	Months Remaining in Project	52	Months	$ 2,500,000 /Mth			$	130,000,000	Portion is Delay Cost
V	Target Sub-Contracts								
	Direct SubContracts (Assume 100% of EAC Value)						$	357,000,000	
	Indirect Subcontracts (Assume 25% of EAC Value)						$	14,500,000	
	Target Total (CB&I "Cost" Only)						$	3,092,311,556	
	G&A	3.09%					$	95,552,427	
	Sub-Total						$	3,187,863,983	
	Minimum Profit						$	24,018,000	
	CB&I Total Target Price To Go						$	3,211,881,983	
	CB&I Target Spent To Date (Actual)						$	932,000,000	
	Total Target Price (Simulation)						$	4,143,881,983	
	CO #16 Target Price (Base) Escalated to Current Year Dollars						$	2,201,980,800	
	CB&I Projected Increase Above CO #16 Cost						$	1,941,901,183	100%$'s
/	Westinghouse Projected Cost Increase:	(Revision 1.0; 2/24/2015)		2007$'s					100% $'s
	Containment Vessel Delay Impacts		As Proposed in August EAC	$ 61,250,000			$	73,500,000	Portion is Delay Cost
	Containment Vessel Revised Scope Impacts (Design Finalization Changes)		As Proposed in August EAC	$ 25,000,000			$	30,000,000	
	Westinghouse G&A		Cost X 4.35%				$	4,502,250	
	Total Westinghouse Target Increase						$	108,002,250	
	Total Target Price Increase from CO 16 Base						$	2,049,903,433	

SCANA Share Current Year Dollars		Target Adder	$ 1,127,446,888	55%$'s
	(Revision 1.0 ; 2/24/2015) was 100%	T&M EAC Adder(CB&I and WEC)	$ 83,590,320	
		EPC Target and T&M Addition	$ 1,211,037,208	

Delay Costs Disputable (25% of CB&I & 100% of WEC)	$ 565,746,859	100%
Net Paid (90% of Disputed)	$ 509,172,173	100%
Retained Portion of Disputed	$ 56,574,686	100%
SCE&G Share of Retained Portion	$ 31,116,077	55%

February 2015 PSC Update Filing SCE&G Costs (07$'s, $000)		
EPC Change Orders	$	54,629
Target & T&M EAC Increase-Entitled	$	71,899
Target EAC Increase-UnEntitled Delay Costs Net 10% of Disputed amounts, where applicable	$	233,371
Target & T&M EAC Increase-UnEntitled Productivity and Overhead Costs.	$	677,998
Liquidated Damages	$	(85,525)
Total EPC Target and T&M Increase Request	$	952,372

(Revision 1.0 ; 2/24/2015) added note

NOTE: This is an estimate of the Target and T&M Cost increase only, it does not include projected Firm Price increases associated with expediting of the Shield Building Panels at NNI.

CONFIDENTIAL INFORMATION - Prepared Subject to Attorney client and work product privileges

EXHIBIT 9
WIT: Mars L
DATE: 10-29-18
K. KIDWELL, RMR, CRR, CRC

(4)

VC Summer Units 2 & 3, 2014 EAC Analysis and Discussion of Cost Changes

Report prepared by Owner's EAC Review and Validation Team

Ken Browne- NND B&F
Margaret Felkel – NND B&F
Kevin Kochems- NND B&F
Sheri Wicker- NND B&F
Kyle Young- NND Construction

This report was prepared based upon an analysis of the revised EPC Project Estimate at Completion (EAC) for Target and T&M cost categories as prepared by the EPC Consortium and presented to the Owner on August 29, 2014. Subsequent to the Consortium presentation the Owner's EAC Review Team convened and conducted a detailed review of the data as presented and as provided at later dates as requested to support the original presentation. Several subsequent meetings were conducted with various members of the Consortium team to review the additional data and discuss the estimate. This report was prepared based on use of the December 2018/December 2019 Substantial Completion Dates for Units 2 & 3 respectively.

Discussion of the EAC Details:

(In the order presented on the Client Summary Sheet)

1.0 2007 $'s Sch @ C0-16 PSC Approved

This column provides the cost basis for Target and T&M costs for both CB&I and WEC as it existed in the Consortium budget at the execution of the C0-16 "Settlement Agreement" (July 2012), with the exception of "Deviations" for identified Consortium Contingency usage prior to that time. This budget included an EPC Target Price Consortium Contingency of approximately $130 Million. The total EPC Consortium budget for Target Price was $1,935,976,000 and for T&M Price was $302,748,000.

2.0 Site layout C.O.

This column provides the cost estimate for site layout modifications requested by the Owner related to re-defined security requirements. This is an "Owner-Directed" Change and the Consortium is entitled to 100% of the actual cost. It should be noted that in addition to the Target and T&M costs indicated in the EAC, there are additional Firm Price cost impacts which are not included in the EAC. At the time of EAC submittal, this Change Order had not been submitted and the estimated Target Price cost is $20,465,000 and the estimated T&M cost is $36,000 (Excluding CB&I G&A and Profit to be added later in the EAC template). Subsequent to submittal of the EAC, revised prices for the Change Order were submitted and the total Target Price impact of the Site Layout Changes has increased to $36,000,000 with $43,000 T&M and an additional Firm Price impact of $21,000,000. All costs presented are in 2007 $'s. The EAC analysis spreadsheet has been updated to reflect this additional cost.

There is no WEC cost impact from this Change.

3.0 Cyber Security C.O.

This column provides the cost estimate for additional Cyber Security provisions required for VCS Units 2 &3 due to Regulatory Changes by the US NRC. Due to the uncertainty surrounding the Cyber Security Change Order, all costs are included in the T&M Price category by the Consortium. The Owner continues to negotiate the work scope included in this Change and monitor the costs of this work evolution. Subsequent to the EAC submittal, the projected T&M cost impact to CB&I is $10,030,582 and $24,180,500 to WEC (including G&A and Profit to each Consortium party). Both parties are entitled to full compensation for the performance of the negotiated scope at EPC controlled T&M rates, as this Change is related to a "Change in Law." In addition to the amounts listed above, there will be further costs associated with Vendor Change Order T&M work. These costs are not included in the current T&M proposal as the work is dependent on a number of estimates and assumptions that are unknown at this time. The Consortium will invoice these costs to the Owner via separate change orders as they are identified and incurred. For the purposes of this EAC review, the Owner has estimated $7,500,000 for the total sum of the Vendor Change Orders. However, it should be noted that this is a broad estimate and that the total cost could be much higher or lower. Although these costs were not included in the EAC by the Consortium, the Owner believes that the Consortium is entitled to the total amount.

4.0 Quantity Changes

This column addresses the additional CB&I craft labor costs associated with commodity quantity changes that have been identified since the original estimate was developed and incorporated in approved "Deviations". These quantity changes are the result of design change/refinement and site specific issues. The costs of all commodities are included in the Firm Price and are not included here. In addition, CB&I has used this column to shift categories for two specific work scopes (Shield Building Erection and HVAC) from self performed to sub-contract. This is represented by the $57,575,000 included in the Direct Subcontracts line. Corresponding reductions are included in the Unit 2 and Unit 3 Direct Labor costs, but they can't be identified in the summary sheet. The Owner agrees that the Consortium is entitled to 100% of this cost through the normal Target Price billing. The EAC total is unchanged at $87,346,000 + G&A and Profit and Entitlement is the same amount.

5.0 Craft Productivity

This column accounts for the lack of productivity and additional labor costs within the Direct Craft category. The original budget assumed a PF of 1.00. This column takes the PF to an overall 1.19, using a 1.15 To-Go PF. As of 12/2/14 (for reporting period through October 2014), the Productivity Factor (PF) for the project to date was 1.49 . In the four subsequent months since receipt of the EAC, the ITD PF has increased steadily from 1.45 to the current value, due to monthly values of 1.97 for August, 1.95 for September, 1.91 for October and 2.48 for November.

In its EAC, the Consortium assumed that the project would reach a goal PF of 1.15 within 6 months. This does not appear to be achievable. The Owner does not believe the assumed To-Go PF of 1.15 is achievable with the current CB&I organization, so the EACH Review Team recalculated the cost with a PF factor of 1.40 To-Go. This resulted in the Owner's EAC estimate increasing $167,461,000 for Direct Craft labor. However, the Owner believes that CB&I should only be entitled to recovery of a reasonable PF, like the one assumed in the EAC (1.19). The Owner therefore does not think CB&I is entitled to any additional costs beyond their estimate of $81,763,000.

6.0 Schedule Impact

This EAC category is comprised of Target and Time & Materials increases for both CB&I and Westinghouse due to delays associated with Structural Modules and Westinghouse Design Engineering issues that result in new Commercial Operation Dates (COD's). The EAC Review Team recommends $0 of increased entitlement for these Target and Time & Materials costs. The Owner has already agreed to increased costs for Structural Module Delays in proposed Change Order 16 and the associated interim Letter Agreement. Delays due to design engineering issues are the responsibility of Westinghouse.

CB&I Target

CB&I includes increased costs for Indirect Construction Labor, FNM Labor and associated FNM expenses for hotel load, Distributables and Fuel associated with Construction Equipment. All increased costs are due to the schedule delays associated with Structural Modules and Westinghouse Design Engineering issues. Based on CB&I's estimating methodology, the EAC Review Team believes these costs are inflated. An example of these inflated costs was the methodology used for distributables whereby CB&I did not look at what was previously spent on distributables but used a "forward looking" estimate of distributable expenses and may include some Firm Price distributables (Change Order #8) such as construction equipment and office supplies and equipment.

CB&I Time & Materials

CB&I includes increased costs for scaffolding craft and FNM labor and used a factor applied to Target scope indirect labor to determine the estimate for craft labor. CB&I also increased its estimate for one Field Non Manual Supervision Employee for hotel load associated with the Schedule Impact. CB&I increased its estimate for distributables for additional scaffolding materials. The EAC Review Team questioned CB&I as to why Scaffolding costs would increase due to the Schedule Impact of Structural Module Delays. The explanation given was not sufficient to support an increase in scaffolding costs related to a Schedule Delay.

Westinghouse Target

Westinghouse includes increased costs associated with its subcontract with CB&I Services for the Containment Vessel Fabrication and Assembly. The EAC Review Team evaluated the estimate documentation provided by CB&I Services to Westinghouse and found erroneous assumptions and mathematical errors. Westinghouse stated that CB&I Services has retracted

this estimate pending additional information and that a new estimate will not be given to the Owner for review with the EAC. Based on a review of the documents provided by CB&I Services to Westinghouse, CB&I Services' updated estimate includes charges for professional/supervision hotel load for 16 months for what CB&I Services considers a delay related to the Containment Vessel Fabrication and Assembly Schedule (mostly due to Westinghouse design issues/changes) plus the COD Schedule Impact Delay.

Westinghouse Time & Materials

Westinghouse includes increased costs for hotel load for professionals working on Licensing and Startup related to the Schedule Impact and new COD's.

7.0 Base Scope Refinement

This EAC category is comprised of Target and Time & Materials increases for Westinghouse due to refinement in Base Scope tasks. The increase in Target costs are associated with Westinghouse EPC Management for CB&I Construction Support and an increase in base scope associated with changes in the estimate from CB&I Services for Containment Vessel Fabrication and Assembly. The increase in Time & Materials costs are associated with additional base scope changes for Plant Startup and Testing netted against an estimated decrease for Import Duties associated with equipment.

Westinghouse Target

Increased cost estimates associated with EPC Management for CB&I Construction Support are due to Consortium's decision to apply a best talent/best athlete approach of using Westinghouse Management Personnel (an approximate staff of twelve managers) to supplement CB&I Construction Management. This base scope of work was never previously included in Westinghouse's Target work scope. The EAC Review Team recommends $0 entitlement, since these costs are directly related to the incompetency of CB&I's construction management staff.

Increased cost estimates due to changes in the CB&I Services Subcontract for the Fabrication and Assembly of the Containment Vessel have been reviewed by the Owner and increased costs are entitled due to change orders between Westinghouse and CB&I Services for this Target Price Work Scope.

Westinghouse Time & Materials

Increased cost estimates associated with Plant Startup and Testing are due to Westinghouse's completion of a resource loaded Plant Startup and Test Schedule. The Owner's Operational Readiness Staff reviewed this schedule with Westinghouse and agrees that increased costs may be entitled. The EAC Review Team recommends that any additional costs in this base scope refinement be paid at Westinghouse Base Scope Labor Rates per EPC Table G-1 because this is not new work scope.

Increased cost estimates due to changes in licensing base scope is the result of an increased workload for Westinghouse to support its licensing efforts. Upon review of this estimate, the

EAC Review Team discovered that Westinghouse is attempting to recover Firm Price licensing Work Scope through T&M Work pricing. The EPC Contract specifically states that the Consortium must provide the Owner with a "Licensed Plant" and much of this estimated additional work is included in Westinghouse's Firm Price Work Scope. Comments from the *Owner's* Licensing Manager include statements that there has only been one Owner directed LAR (Licensing Amendment Request) and all other E&DCR's and LAR's are due to Westinghouse changes/issues. The Owner has experienced increased costs due to additional licensing support staff and NRC fees to review Westinghouse's licensing changes. The EAC Review Team recommends $0 entitlement for the increased costs above the original T&M Licensing Allowance and suggests seeking recovery from Westinghouse for the increase in *Owner's* costs associated with these changes.

Decreased cost estimates due to changes in Import Duties are directly associated with the decrease in duties associated with the Federal Government's Korean Free Trade Agreement. The EAC Review Team agrees that the Owner has already seen a decrease in import duties associated with equipment from South Korea. Although the Owner cannot verify Firm Price costs used to compute Import Duties it is assumed that this $15 million decrease is a reasonable estimate and agrees to deduct from the EAC.

8.0 Regulatory Driven

This column addresses Westinghouse costs associated with changes that are regulatory in nature as identified by the Consortium. The three scopes included are: Plant Startup & Testing, ITAAC Maintenance, and the Affordable Care Act. Both of the estimates for ITAAC Maintenance ($2,623,837) and the Affordable Care Act ($4,502,868) appear reasonable and the Owner believes the Consortium is entitled to these costs per regulatory changes enacted since the EPC Agreement was signed in 2008. For Plant Startup & Testing, the Consortium has identified *$30,000,000* in regulatory driven changes, which includes costs for CVAP, FPOT, F3POT and hotel load costs. The Owner does not believe that all of the costs included in this estimate are appropriately identified by the Consortium as new scope per regulatory changes. Costs that should not be contained in this estimate include any and all costs identified as Firm Price by the Owner such as Home Office Program Managers.

9.0 Contingency/Risk Evaluation

CB&I Target

This EAC category is comprised of increased CB&I Target costs for Contingency based on 11% of the ETC (Estimate-To-Completion). The EAC Review Team recommends $0 entitlement since CB&I's Contingency account has been restored for the inclusion of previous contingency usage in the "Quantity Changes" and "Other Miscellaneous Adjustments" categories of the EAC and this restores the Consortium to a Target Price Contingency of $123M, which is approximately 6% of the remaining ETC.

10.0 Other Misc. Adjustments

This column provides the projected cost impacts of identified changes that have not been incorporated into deviations by CB&I. In addition to cost changes due to design completion and refinement, included in this category are cost impacts due to other issues such as the delayed completion of the NI base mat due to design changes in the reinforcing bars. Cost Impacts such as this which are the responsibility of the Consortium are recognized, but are not included in the "entitlement" for CB&I. Some of the supporting information for these costs included interviews with CB&I personnel. CB&I was unable to substantiate the total costs for this EAC category.

11.0 Field Non Manual (FNM)

This column provides the cost estimate for additional FNM employees required to complete the project. CB&I provided details to support the cost included in the EAC. The Owner was able to verify the EAC amount, and determined it is reasonable only if CB&I conforms to the staffing plan as provided to the EAC Review Team. In addition to the staffing plan provided to the EAC Team, CB&I has provided a curve with limited data to indicate FNM staffing plan for site facilities and resource planning purposes. The FTE quantities reflected in the curve appear to be substantially higher than the detailed plan provided (20% +). Following the curve vs. the plan will result in a significant impact to the FNM cost.

Using the detail provided by CB&I, the Owner made additional adjustments to the estimated costs to complete the project by 1) applying actual pay rates and 2) extended the time employees were on-site to a more reasonable date (ex. Project Accounting). This analysis resulted in the base scope FNM estimate of $179M (Excluding G&A and Profit to each Consortium party to be added later in the EAC template). CB&I would only be entitled to $146M of these costs due to the fact that FNM costs have a factor of 1.70 added to them to cover administrative expenses. The Owner has been told that the actual factor experience by CB&I is approximately 1.3-1.4. Therefore, the Owner should only pay a 1.4 markup on any FNM expense incurred in excess of the amount originally budgeted.

12.0 Acceleration

This column contains an estimate for the increase in project cost due to acceleration to meet the December 2018/2019 SCDs. The Consortium has identified approximately $171M for both Target and T&M costs. Of this $171M, $7.5M was incorrectly included as Target Price for FNM Living Allowances and/or Relocation expenses. These costs should be Firm Price. The majority of the acceleration costs are due to the introduction of a limited night shift of 340 Direct Craft, 100 Indirect Craft, and 60 FNM employees. There are also an additional 100 FNM added to the day shift to support the new night shift. The Owner does not believe the Consortium is entitled to any of the $171M of acceleration costs as the acceleration is necessary due to Structural Module Delays.

13.0 Total EAC

Through various discussions with the Consortium the Owner understands the methodology used by the Consortium to estimate these costs. For the majority of these costs, a fairly

judgmental/subjective approach was used rather than a formulaic methodology. As such, the EAC Review Team would be challenged to reproduce these costs if requested. When viewed as a rough order of magnitude this estimate appears to be a reasonable attempt at establishing the minimum Target Price and T&M Price to be expected for completion of the project.

The EAC Review Team believes it has a reasonable understanding of the majority of the costs presented by the Consortium. However, understanding does not equate to agreement of the costs. There were several action items that the Owner did not receive complete answers for but deferred further discussion due to materiality.

Message

From:	WALKER, CARLETTE L [/O=SCANA/OU=COLUMBIA/CN=RECIPIENTS/CN=CWALKER99]
Sent:	11/10/2014 8:09:28 PM
To:	ADDISON, JIMMY E [/O=SCANA/OU=Columbia/cn=Recipients/cn=JADDISON]
Subject:	Re: Thursday mtg

Yes, I also have the benefit of talking with George Wenick Redacted for Privilege
Redacted for Privilege

carlette walker
original Message
From: ADDISON, JIMMY E
sent: Monday, November 10, 2014 2:38 PM
To: MARSH, KEVIN B
Cc: WALKER, CARLETTE L
subject: RE: Thursday mtg

Thanks Kevin.

carlette, does this give you what you need?

Jimmy

From: MARSH, KEVIN B
Sent: Monday, November 10, 2014 2:22 PM
To: ADDISON, JIMMY E
Cc: WALKER, CARLETTE L
subject: RE: Thursday mtg

I talked with Kenny this morning and we believe the message to ORS should be that we have had one initial meeting with the consortium and are still having discussions. They canceled the meeting last week because they were not ready. I believe there more discussions to come, but can't predict the outcome. We should not get into the details of the discussions to date. Kevin

From: ADDISON, JIMMY E
Sent: sunday, November 09, 2014 7:57 PM
To: WALKER, CARLETTE L
Cc: MARSH, KEVIN B
subject: Re: Thursday mtg

sure. I am headed to Dallas tomorrow and Kevin is joining me on Tuesday for investor meetings through Thursday. I will talk to him and get back to you about negotiations. Quarterly will be filed tomorrow I believe (so we will have everything filed before our investor meetings start Tuesday afternoon) so there should be no issues with sharing anything in the report after that point.

Kevin, I'll copy you in case you can go ahead and provide carlette any feedback on the negotiation points.

Jimmy E Addison
From: WALKER, CARLETTE L
sent: Sunday, November 9, 2014 7:33 PM
To: ADDISON, JIMMY E
Cc: SMITH, ABNEY A JR
Subject: Thursday mtg

Ron, Alan and I are scheduled for the first qtrly meeting with Dukes Scott this Thutsday. Dukes has specifically indicated that he wanted me to provide him with updates on the EAC and the delay negotiations. Marion Cherry shared with our Commercial Team that the mtg scheduled for last week between WEC and CB&I's CEOs and the Owners' was cancelled. Rhonda o'banion sent an email out Friday from Steve that directed the project team to not share the normal financial project status graph for the total projected costs until after we have filed the Qtrly report. Can you help me to get some talking points on the negotiation status before the Thursday meeting and also confirm that the total projected cost slide could be shared after we file the BLRA Report tomorrow?
Thanks,
carlette

carlette walker

EXHIBIT Jf
WIT: Marsh
DATE: Jo-Z4-18
K. KIDWELL, RMR, CAR, CRC

BECHTEL

INFRASTRUCTURE
MINING & METALS
NUCLEAR, SECURITY & ENVIRONMENTAL
OIL, GAS & CHEMICALS

DRAFT

V.C. Summer Nuclear Generating Station Units 2 & 3

Preliminary Results of Bechtel Assessment

October 22, 2015 Presentation to SCE&G and Santee Cooper

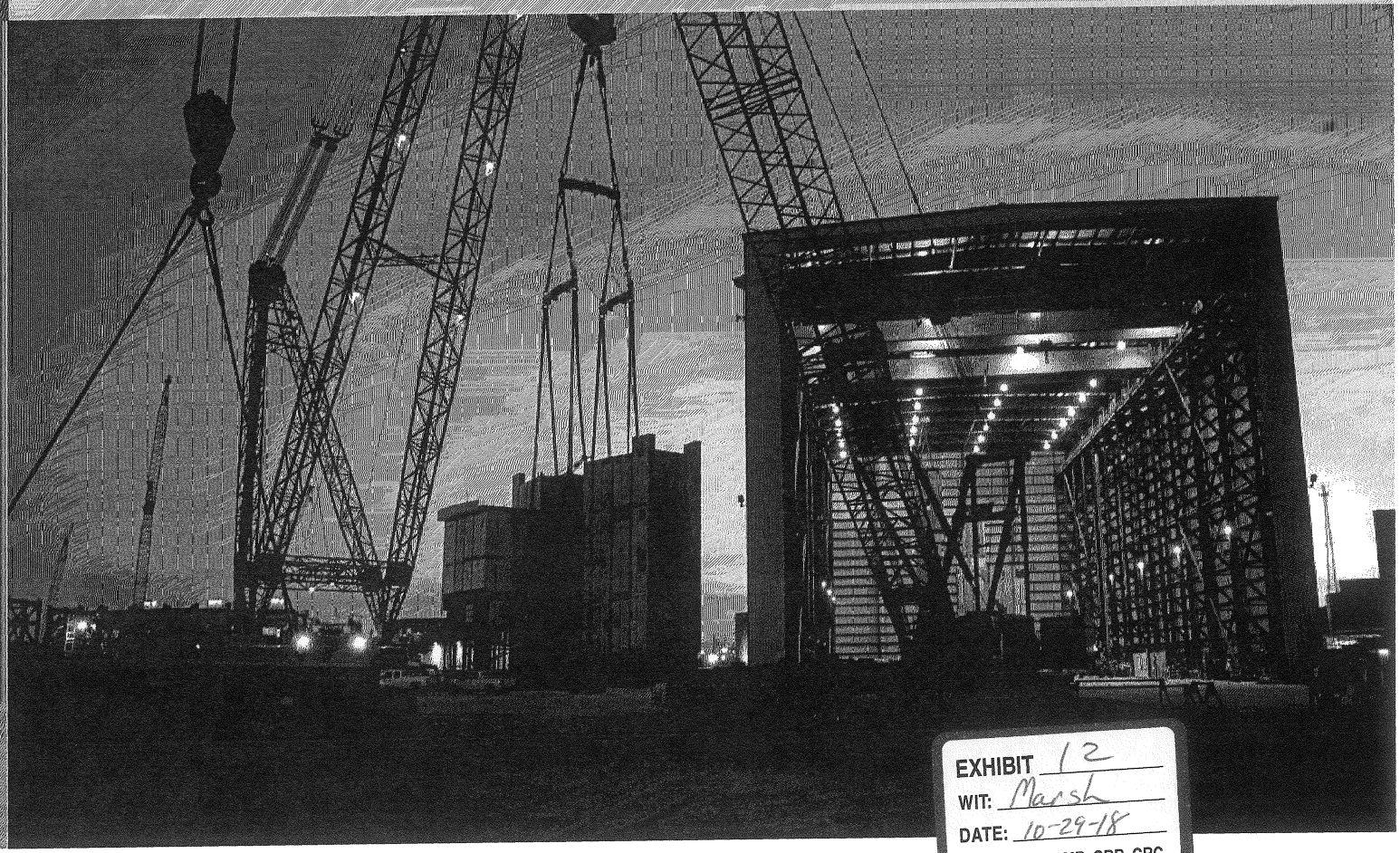

EXHIBIT 12
WIT: Marsh
DATE: 10-29-18
K. KIDWELL, RMR, CRR, CRC

Strictly Confidential to
SCE&G and SCPSA

SCANA_RP0800699

Agenda

DRAFT

- Overview
- Introduction
- Assessment Timeline
- Assessment Scope
- Bechtel Assessment Team
- Project Management
- Engineering & Licensing
- Procurement
- Construction
- Start-Up
- Project Controls
  - Schedule Assessment
- Preliminary Conclusions

Overview

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- The objective of the assessment was to assist the Owners to better understand the current status and potential challenges of the project and to help ensure the project is on the most cost efficient trajectory to completion.
- Based on our assessment, the current schedule is at risk. Significant issues include:
  - To-go scope quantities, installation rates, productivity, and staffing levels all point to completion later than current forecast.
  - While EPC plans and schedules are integrated; the plans and schedules are not reflective of actual project circumstances.
  - The Consortium lacks project management integration needed for EPC.
  - There is a lack of a shared vision, goals, and accountability between the Owners and the Consortium.
  - The WEC-CB&I relationship is extremely poor, caused to a large extent by commercial issues.
  - The Contract does not appear to be serving the Owners or the Consortium particularly well.
  - The issued design is often not constructible resulting in a significant number of changes.
- The oversight approach taken by the Owners does not allow for real-time, appropriate cost and schedule mitigation.

Introduction

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- The assessment was performed in accordance with an August 6, 2015 Professional Services Agreement between Bechtel Power Corporation and Smith, Currie & Hancock LLP (SCH) for the purpose of assisting SCH in giving legal advice.
- The objective of the assessment was to assist SCH and the Owners (South Carolina Electric & Gas Company and South Carolina Public Service Authority) to better understand the current status and potential challenges of the project in anticipation of litigation and also to help ensure the project is on the most cost efficient trajectory to completion.
- Bechtel's team evaluated the current status and forecasted completion plan through the design, supply chain, and construction aspects of the project.
  - Focus was on understanding the issues that have caused impacts to date, assessing the effectiveness of the mitigation plans put into place to address those issues, and reviewing the project management tools and work processes being employed to plan and execute the project, including change management, through completion and turnover of the units.
- Materials received, collected or prepared by Bechtel in connection with the assessment are the property of the Owners and shall be treated as confidential.

Assessment Timeline

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- Schedule:
  - Issue draft report 7 weeks following site mobilization for Owners' review.
- The assessment included:
  - Data validation
  - Site walkdowns
  - Leadership team interviews
  - Functional breakout sessions
  - Preparation of report
- Key dates:
  - August 14: Initial documents received from Consortium
  - August 19: Portions of Integrated Project Schedule received
  - September 8: Bechtel Team mobilized to site
  - September 9: Consortium presentation to Bechtel Team
  - October 22: Bechtel presentation to SCE&G and Santee Cooper

Assessment Scope

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- During the assessment period, the Bechtel team:
  - Reviewed 353 Consortium and Owner documents.
  - Attended 70 meetings with Consortium and Owner personnel.
  - Conducted 35 interviews of Consortium and Owner personnel.
  - Completed 24 site walkdowns/real-time observations.
  - Attended 7 subject-specific presentations.
- Bechtel's assessment is based on the data, schedule, and other information obtained from the Consortium and the Owners:
  - Construction bulk quantities were obtained from the Consortium (various questions on these quantities were identified).
  - Some data and information was provided electronically by the Owners and the Consortium. For the majority of data and information, a single hard copy was placed in a Reading Room at the site and no additional copies could be made. This limited our ability to fully assess the information [e.g., engineering schedules, ROYG (red-orange-yellow-green) report, etc.]
  - Many documents were redacted.
- Only key observations are identified in this presentation. Additional observations will be included in the final report.

Bechtel Assessment Team

DRAFT

Carl Rau
Executive Sponsor

Dick Miller
Assessment Team Leader

Ty Troutman
Principal Vice President
Assessment Reviewer

John Atwell
Principal Vice President
Assessment Reviewer

George Spindle
Construction

Mike Robinson
Construction

Ed Sherow
Engineering and Licensing

Ron Beck
Engineering and Construction

Steve Routh
Engineering and Licensing

Bob Exton
Procurement & Contracts

Jason Moore
Project Controls

Jonathan Burstein
Project Controls

Bob Pedigo
Startup

Jerry Pettis
Project Administration

- 14 senior managers supported by Bechtel functional departments
- Over 500 years of total experience
- Over 300 years of EPC nuclear experience
- **Experience on over 85 EPC projects**

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Project Management
Key Observations and Recommendations

- The Consortium's project management approach does not provide appropriate visibility and accuracy to the Owners on project progress and performance.
- There is a lack of accountability in various Owner and Consortium departments.
- The Consortium's lack of project management integration (e.g., resolution of EPC issues) is a significant reason for the current construction installation issues and project schedule delays.
- The approach taken by the Owners does not allow for real-time, appropriate cost and schedule mitigation.

Recommendation:

» Owner: Develop an Owners' Project Management Organization and staff it with EPC-experienced personnel who are empowered with the roles, responsibilities, and accountabilities for making the needed project-related decisions to keep the project on track.

» Consortium: Assign recognized high-performing personnel to the current Consortium management personnel (i.e., shadow positions) as part of a major improvement plan.

Project Management
Key Observations and Recommendations (cont'd)

- The WEC-CB&I relationship is extremely poor, caused to a large extent by commercial issues.

  Recommendation: The Owners should take an active role in determining the reason(s) for the relationship and develop an action plan, including possible new contract terms, to fix the relationship.

- The overall morale on the project is low.

  Recommendation:
  - » The Project needs to experience some successes, no matter how small. Publish and post scheduled activities for the coming months around the job site. Post activities that have a high likelihood of being completed within schedule. Reward those responsible for achieving success (i.e., make success contagious).
  - » Recognize individuals for their contributions to the project. For example, have an employee of the month from the various functions/various craft trades and publicly reward them. Rewards could include preferred parking for a month, gift certificates, etc.

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Project Management
Key Observations and Recommendations (cont'd)

- It appears that the Contract has created an imbalance between the Owners and the Consortium. The Consortium does not appear to be commercially motivated to meet Owner goals.
- WEC Engineering has not been completely responsive to Procurement and Construction requests for clarification and changes (e.g., timeliness, constructible designs); this is believed to be caused mostly by the commercial situation (i.e., WEC fixed price engineering).
- The Consortium's commercial structure, while not shared, is outwardly affecting the day-to-day working relationships between the Consortium partners and is creating performance issues, including significant non-manual turnover.

Recommendation:

» Align commercial conditions with the project goals.

» Facilitate Owner and Consortium teambuilding. If necessary, replace personnel with others that share the goals developed by the project.

» Determine the realistic to-go forecast costs for the project.

DRAFT

Engineering & Licensing
Key Observations and Recommendations

- Based on the team's observation of current civil work, the issued design is often not constructible (currently averaging over 600 changes per month). The complexity of the engineering design has resulted in a significant number of changes to make the design constructible.

  Recommendation:
  - » Locate dedicated WEC engineering response teams to the site with design authority to resolve current Engineering & Design Coordination Reports (E&DCR) problems.
  - » Establish a WEC/CB&I "Light Structures" design organization at the site to work with construction to redesign and reissue piping, HVAC, conduit, and tray supports.

- The construction planning and constructability review efforts are not far enough out in front of the construction effort to minimize impacts.

  Recommendation: Intensify efforts of Strategic Planning Group, work package planning, constructability reviews, etc. to early identify design changes needed.

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Engineering & Licensing

Key Observations and Recommendations *(cont'd)*

- Resolution of many E&DCRs is behind schedule. The E&DCR backlog is not decreasing.

  Recommendation: Provide additional staffing to address emergent E&DCRs and work off current backlog. Locate more appropriate resources to the site to address early any emergent E&DCRs.

- Engineering staffing remains extremely high (around 800 total engineers for WEC and CB&I) for the reported percent complete of the design; however, it appears that the staffing is needed to complete the design and provide support to construction.

  Recommendation:
  - » Allocate dedicated resources to complete and issue the remaining design on or ahead of current schedule which is ≈ the end of 2016.
  - » Plan to reduce engineering headcount and aggressively monitor.

DRAFT

Engineering & Licensing

Key Observations and Recommendations *(cont'd)*

- There is significant engineering and licensing workload remaining for electrical design, I&C, Post-Design Engineering Closure Plan, ITAAC closure, etc. Much of this remaining engineering will potentially impact construction.

  Recommendation:
  - » Allocate dedicated resources to complete and issue the remaining design on or ahead of the current schedule which is approximately the end of 2016.
  - » Convene a group of SMEs and commit to completing the scoping, resource loading, and scheduling of Post-Design Engineering Closure Plan work by no later than 102016.

- 119 license amendment requests (LARs) and 657 departures have been identified to date. This is a significant project workload that appears to be well planned and scheduled. Interactions with the NRC are good with a focus on meeting construction need dates (CNDs). Emergent issues potentially requiring NRC approval of LARs remain a significant project concern.

  Recommendation: Continue planning and scheduling efforts for LARs and departures and active interactions with NRC to meet CNDs. Intensify efforts of Strategic Planning Group, work package planning, constructability reviews, etc. to emphasize early identification of potential departures.

Procurement

Key Observations and Recommendations

- There is a significant disconnect between construction need dates and procurement delivery dates. There are:
  - 457 open WEC and 2,907 open CB&I equipment deliveries.
  - 31 WEC and 28 CB&I Standard Plant POs to be placed.
- The ROYG (red-orange-yellow-green) report is described as inaccurate.

  Recommendation:
  - » The Consortium should complete their schedule adherence effort by 10/31/15 so that mitigation plans can be implemented, resulting in the ROYG report properly addressing CNDs, PO awards, and supplier deliveries.
  - » Assess resource needs to properly manage this activity.
- The amount of stored material onsite is significant, creating the need for an extended storage and maintenance program. Inventory validation in the yard is reported to be only at **48% accuracy**.

  Recommendation: Investigate and determine if component and material deliveries can be delayed for shipment (i.e., delay fabrication and delivery to minimize onsite storage durations) in order to minimize the need to perform extended period PM and storage actions on site. Implement every opportunity to minimize onsite storage duration after initial delivery.

Procurement

Key Observations and Recommendations *(cont'd)*

- The current Min/Max warehousing program is insufficient for the scale of the construction effort, which is impacting productivity.

  Recommendation:

  - » Expedite the finalization of the Min/Max strategy and implementation of the identified Blanket Purchase Orders (BPOs) so that construction can use them, versus writing individual material requisitions.
  - » In reviewing the report of BPOs in place that would support a Min/Max system, there must be further discussion with construction and field engineering as to what products should be maintained within the Min/Max system.
  - » Educate site personnel on the use and process of the BPOs and the Min/Max system. It was evident that material was ordered versus use of Min/Max BPOs.

Construction
Key Observations and Recommendations

- Construction productivity is poor: Unit 2 is 2.3, Unit 3 is 1.6.

  Recommendation:
  - » Achieve more timely resolution of engineering issues.
  - » Assemble a team of subject matter experts to review proposed resolutions.
  - » Re-assess tolerances and repair procedures to give construction more latitude in resolving issues.
  - » Simplify the work packaging process (see next slide).
  - » Efforts need to be made to keep the craft at the workface (have coffee breaks and lunch at their place of work).

- Manual and non-manual sustained overtime is negatively affecting productivity.

  Recommendation:
  - » The work week should be reduced to no more than 48 hours (four 10 hour days, one 8 hour day). Spot overtime beyond 48 hours should be kept to a minimum.
  - » Consider craft incentive plan.

Construction

Key Observations and Recommendations *(cont'd)*

- CB&I's work packaging procedures are overly complex and inefficient, directly affecting craft productivity.

  Recommendation:
  - » Simplify the process.
  - » Reduce the scope of the package.
  - » Limit the foreman's package to only the information needed.
  - » Incorporate changes into the design drawings before work begins.

- Aging of the construction workforce is impacting productivity.

  Recommendation:
  - » Develop mentoring and training plan to promote junior craft and field engineering personnel with periodic evaluations and feedback sessions.
  - » Create and staff shadow positions for senior level positions within the Consortium intent on developing new talent that is focused on project completion.

Construction

Key Observations and Recommendations *(cont'd)*

- The indirect to direct craft ratio (1,100 persons to 800 persons) is very high at 130% (typical mega-project is 35 to 40%).

  Recommendation: Develop a plan to identify targeted reductions to reduce the indirect ratio to a reasonable level and monitor it weekly.

- Field non-manual turnover is high at 17.4% per annum.

  Recommendation: Perform evaluation of high turnover rate to correct the problem.

Construction

Key Observations and Recommendations *(cont'd)*

- The workable backlog can support significantly more than the current craft workforce. The current construction percent complete per month is only 0.5%.

  Recommendation:
  - » Staff up to work available areas.
  - » Increase the amount of time the craft are at the workface. Perform time and motion study.
  - » Consider combining the Unit 2 and 3 Nuclear Island teams to reduce non-manual staffing and allow flexibility when issues are encountered.
  - » Use the onsite training facility and local vocational schools to train more crafts that can't be recruited (rebar ironworkers now; pipefitters and electricians in the future).

- The project safety, housekeeping, and quality records are very good.

  Recommendation: Keep up the good work! Consider simplifying the tailgate write-up so it can be more easily understood and retained. Reconsider need for each craftsman to sign the morning bulletin.

Start-Up
Key Observations and Recommendations

- The startup test program schedule is in the early stages of development.

  Recommendation: Expedite the effort to reconcile the Component Test and Pre-Operational Test system templates currently loaded in the project schedule to the actual systems' scope and estimated unit rates. Completing this activity is critical to having a reasonable understanding of the overall project completion schedule.

- The current boundary identification package (BIP) turnover rate appears to be overly aggressive and not consistent with the current construction completion schedule.

  Recommendation: Reconcile the timing of BIP turnovers to the planned construction percent complete dates. This will impact when Component Testing and Pre-Operational testing activities will occur, thus driving the project completion schedule.

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Project Controls
Key Observations and Recommendations

- The Consortium's forecasts for schedule durations, productivity, forecasted manpower peaks, and percent complete do not have a firm basis.

  Recommendation: See Schedule Assessment (starts on next slide).

- The Owners do not have an appropriate project controls team to assess/validate Consortium reported progress and performance.

  Recommendation: Form Owners' Project Controls team (Project Controls Manager, Lead Planner, Lead Cost). Establish tracking tools separate from the Consortium for verification of project progress and performance. Require the appropriate level of detailed information from the Consortium.

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Schedule Assessment
Key Bases

- Data from 21 completed nuclear units and 4 units in the planning phase was used.
- Civil/steel activities:
  - Walked down and assessed based on current progress and performance.
- Bulk commodities and major equipment:
  - Logic and installations derived from Bechtel historical data.
  - Median sustained rates from Bechtel historical data used for creation of installation durations.
- Craft:
  - Peak craft limited by building saturation levels.
  - All activities worked on a 48 hour week; second shift at 20%.
  - Indirect to direct craft ratio is 35% (currently 130%).
- Stagger between Unit 2 and Unit 3 commercial operation dates:
  - Based on critical craft peaks (pipefitters including welders & electricians).

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Schedule Assessment

Key Assumptions

- Current civil progress and performance will remain unchanged.
- Piping and electrical progress and performance is based on similar Bechtel experience.
- Sufficient quality craft is available up to 3,700 peak.
- All modules and material will be available to support the assessed construction dates.
- Preventive maintenance keeps all equipment operationally ready.
- Quantities provided by the Consortium were used and are accurate:
  - Exception: The annex building quantities are considered unreliable, hence schedule extension due to higher than expected quantities in this area not included.
- No construction equipment limitations.
- Design and work packages are available to support construction need dates.
- The following items do not enter the critical path:
  - NRC approval of license amendment requests
  - ITAAC closures
  - Cyber security
  - Simulator construction and operator qualifications

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Schedule Assessment
Preliminary Results

- Preliminary assessment of the Unit 2 and 3 Commercial Operation Dates based on the Key Bases and Assumptions stated above:

	Unit 2	Unit 3
Current COD	June 2019	June 2020
Adjustment	18 to 26 months	24 to 36 months
New COD	Dec 2020 to Aug 2021	June 2022 to June 2023

- The critical path will change from the shield wall to more typical bulk installations through overall project checkout and testing/start-up.
- Increasing schedule confidence to 75% increases the schedule duration by 8 months (included in the 26 months for Unit 2 and the 36 months for Unit 3).
- The stagger between the Unit 2 and 3 CODs extends by 6 months to 18 months.
- The peak monthly construction percent complete is reduced from 3.1% to 2.3%.
- Primary checkout window adjusts by 6 months to 18 months per unit.
- Total craft population increases by 25% to ~3,700.
  - At peak, 850 pipefitters and 730 electricians are required.
- Bulk installation durations increased by a minimum of 30%.

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Schedule Assessment

Preliminary Results *(cont'd)*

- Schedule Probability Assessment:
  - Only performed on critical path and top 4 near critical paths because of time limitations.
  - Typical 1,000 iteration Monte Carlo approach.
  - Minimum/maximum windows provided by senior construction personnel on assessment team.
  - Minimum/maximum historical bulk installation rates used as secondary verification method.
  - Only preferential logic considered.
  - Identification of required contingency for assessment purposes only.
  - A more robust approach is needed prior to finalization of any changes to the baseline target schedule.

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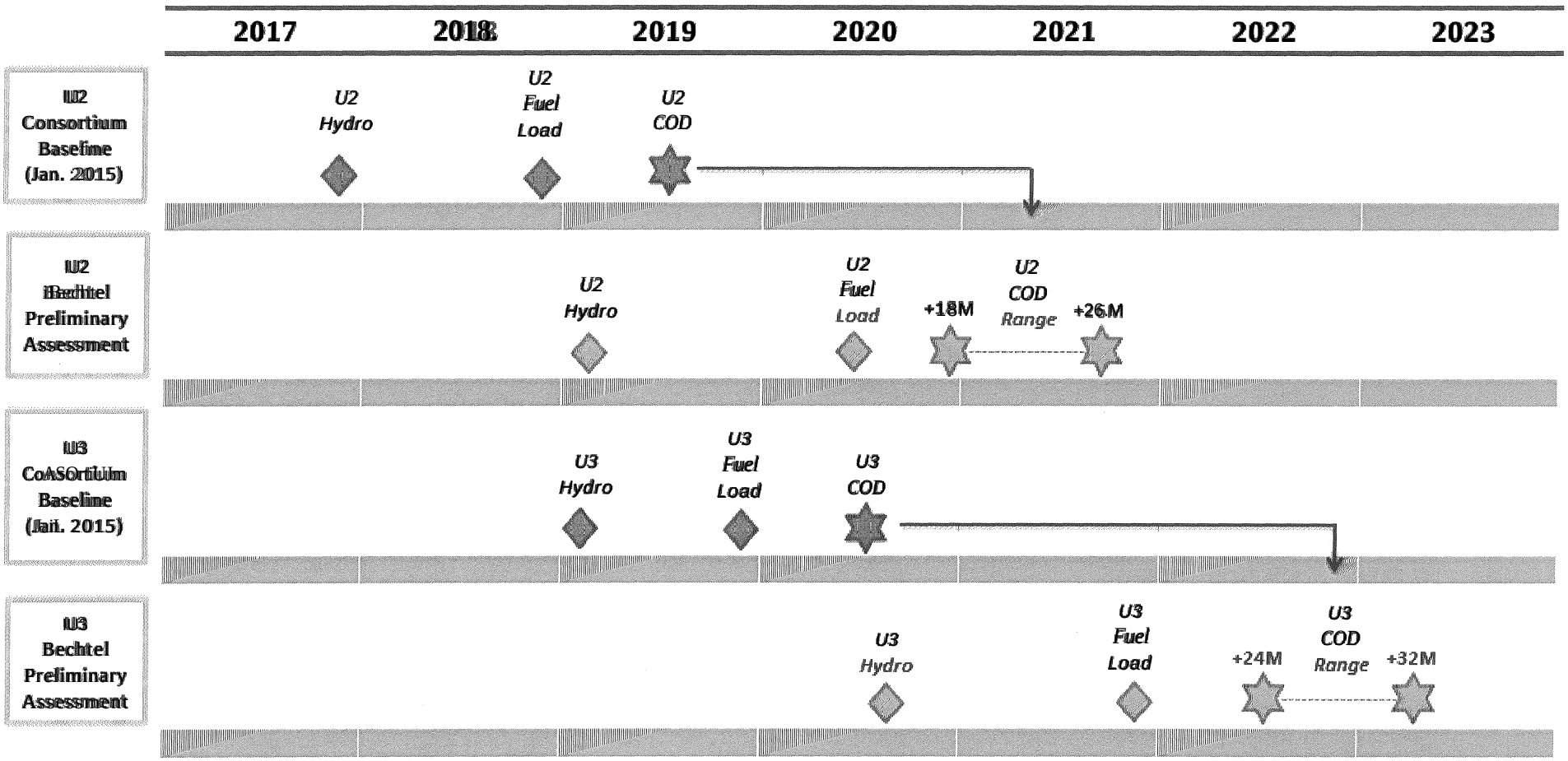
Schedule Assessment
Milestone Comparison



Preliminary Results of Bechtel Assessment

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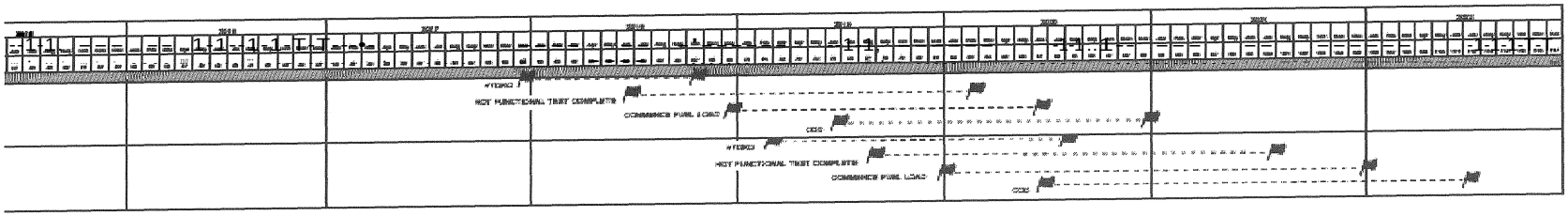
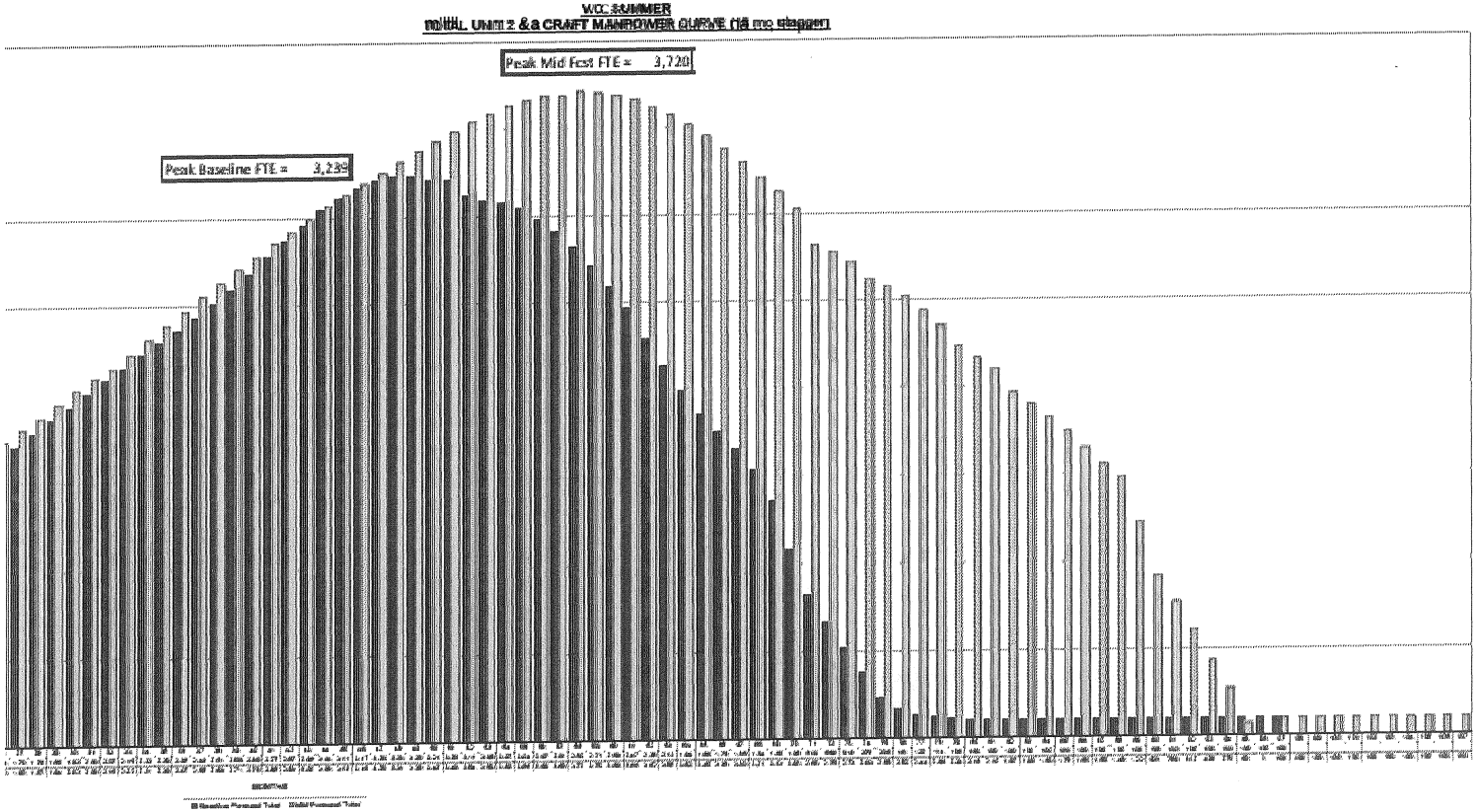
Schedule Assessment

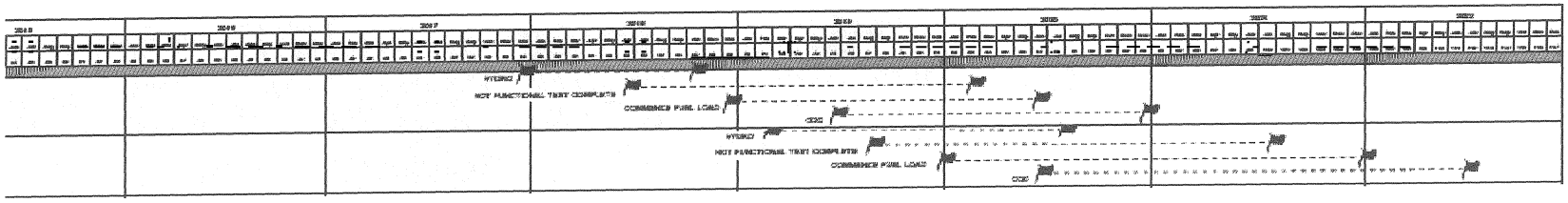
Total Craft Manpower Comparison

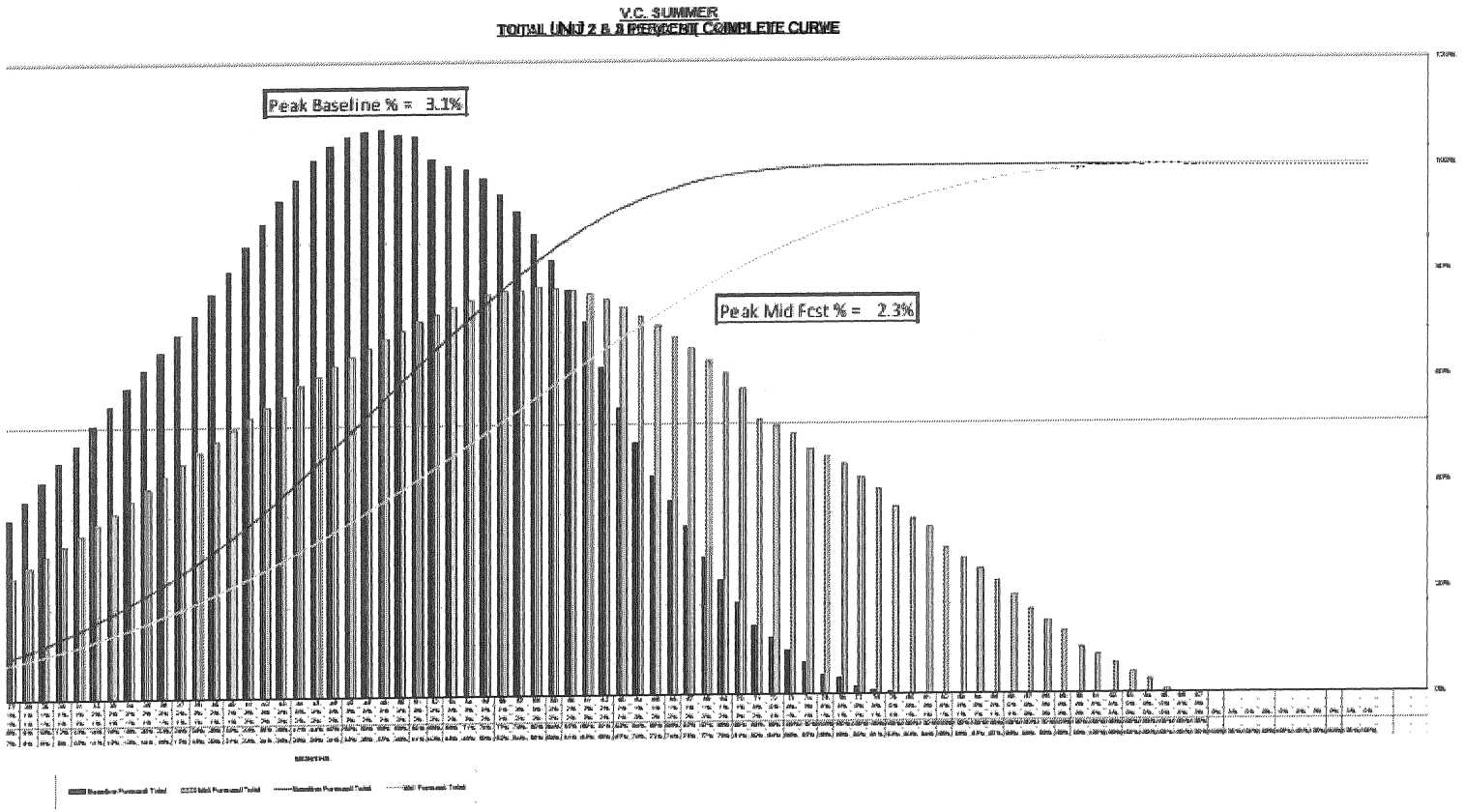




Schedule Assessment

Construction Percent Complete Comparison





Preliminary Conclusions

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- The AP1000 is a first-of-a-kind technology, 10 CFR 52 is a new licensing process, and these are the first new nuclear plants being constructed in the U.S. in decades. Challenges would be expected.
- However, the V.C. Summer Units 2 and 3 project suffers from various fundamental EPC and major project management issues that must be resolved for project success:
  - The Consortium's project management approach does not provide appropriate visibility and accuracy to the Owners on project progress and performance.
  - The Consortium's forecasts for schedule durations, productivity, forecasted manpower peaks, and percent complete do not have a firm basis. Bechtel's preliminary assessment of the Unit 2 and 3 Commercial Operation Dates indicates:

	Unit 2	Unit 3
Current COD	June 2019	June 2020
Adjustment	18 to 26 months	24 to 36 months
New COD	Dec 2020 to Aug 2021	June 2022 to June 2023

Preliminary Conclusions *(cont'd)*

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- There is a lack of a shared vision, goals, and accountability between the Owners and the Consortium.
- The Consortium lacks project management integration needed for EPC.
- The WEC-CB&I relationship is extremely poor, caused to a large extent by commercial issues.
- The overall morale on the project is low.
- The Contract does not appear to be serving the Owners or the Consortium particularly well.
- The issued design is often not constructible resulting in a significant number of changes. The construction planning and constructability review efforts are not far enough out in front of the construction effort to minimize impacts.
- There is significant engineering and licensing workload remaining (currently over 800 engineers). ITAAC closure will be a significant effort.
- Emergent issues potentially requiring NRC approval of LARs remain a significant project concern.
- There is a significant disconnect between construction need dates and procurement delivery dates.
- The amount of stored material onsite is significant, creating the need for an extended storage and maintenance program.

Preliminary Conclusions *(cont'd)*

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- Construction productivity is poor for various reasons including changes needed to the design, sustained overtime, complicated work packages, aging workforce, etc.
- The indirect to direct craft ratio is very high.
- Field non-manual turnover is high.
- The schedule for the startup test program is in the early stages of development. The BIP turnover rate appears to be overly aggressive.
- The Owners do not have an appropriate project controls team to assess/validate Consortium reported progress and performance.

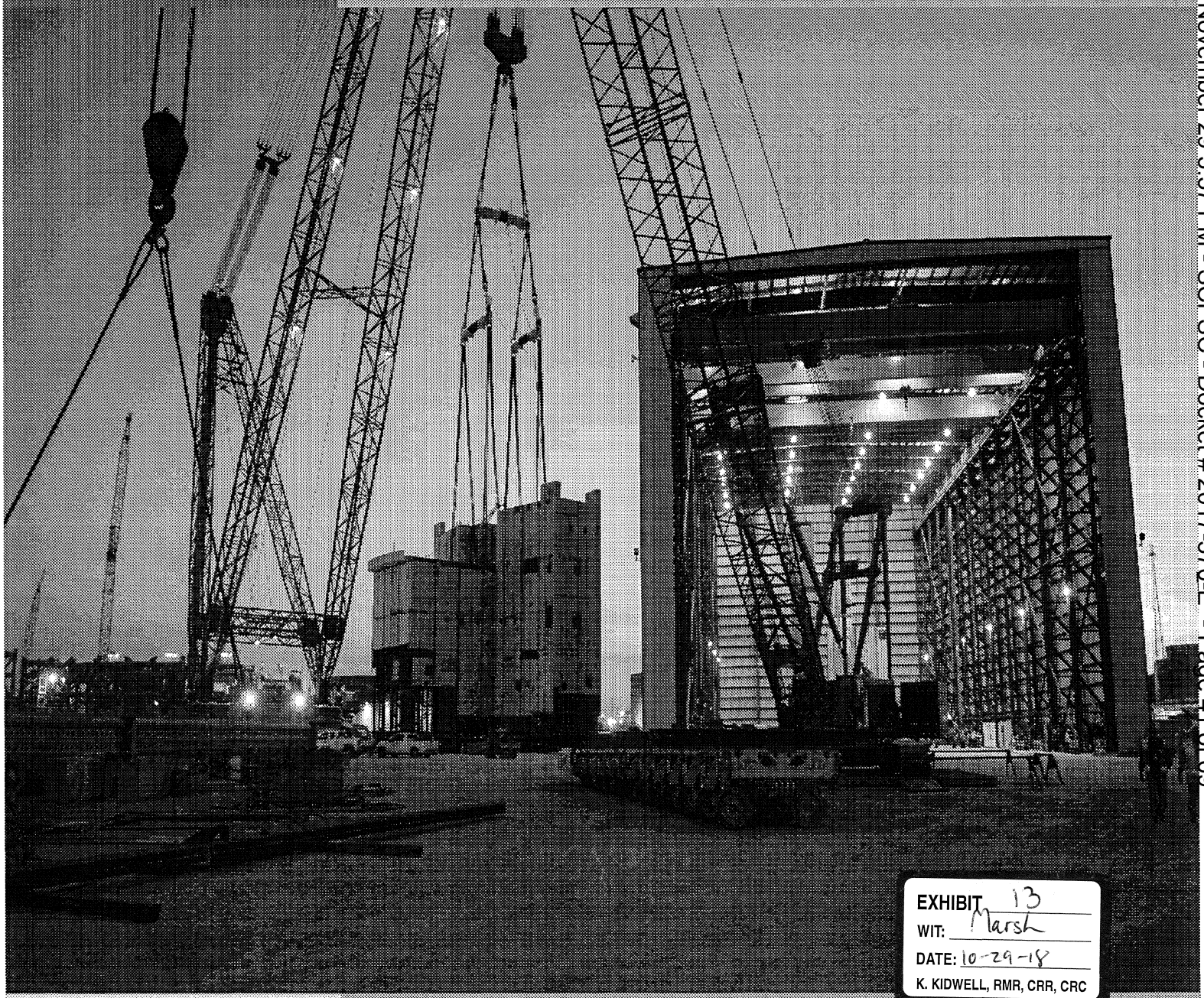
BECHTEL

INFRASTRUCTURE
MINING & METALS
NUCLEAR, SECURITY & ENVIRONMENTAL
OIL, GAS & CHEMICALS

V.C. Summer Nuclear Generating Station Units 2 & 3

Schedule Assessment Report

February 5, 2016



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34°17'55"N | 81°16'53"W

V.C. Summer Nuclear Generating Station Jenkinsville, SC USA

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1. Introduction

In accordance with a Professional Services Agreement signed on August 6, 2015 between Bechtel Power Corporation and Smith, Currie & Hancock LLP (SCH), Bechtel performed an assessment of the Virgil C. Summer Nuclear Generating Station (V.C. Summer) Units 2 & 3 project. The objective of the assessment was to assist SCH and the Owners (South Carolina Electric & Gas Company (SCE&G) and South Carolina Public Service Authority (SCPSA)) to better understand the current status and potential challenges of the project to help ensure the project is on the most cost efficient trajectory to completion.

The February 5, 2016, "V. C. Summer Nuclear Generating Station Units 2 & 3, Project Assessment Report," contains the results of Bechtel's assessment for each functional area—project management, engineering and licensing, procurement, construction and project controls, and startup.

This Schedule Assessment Report describes Bechtel's evaluation of the project construction schedule to determine its most likely outcome. The schedule assessment is based on the information, walkdowns, interviews, evaluations, observations, recommendations, etc. identified in the Project Assessment Report. The current status of the project's to-date performance and percent complete by area were used as the starting point. Bechtel's past performance (21 completed nuclear units) plus four new reactor projects in the planning phase were used as predictive metrics for to-go activities.

2. Schedule Analysis Process

The primary steps of the schedule analysis process are identified below.

1. A Level 2 baseline schedule was created from data included within the Consortium's Primavera P6 baseline file (January 2015) and the Consortium's published Level 1 summary schedule.

2. Current forecast bars were added from data included within the Consortium's P6 current forecast file (July 2015) and the Consortium's published Level 1 summary schedule with status through July 2015.

3. A baseline version of bulk commodity curves for each major facility was created from data included within the Consortium's bulk curves.

   The Consortium provided Bechtel the estimated bulk quantities for installation, as well as the budgeted jobhours and performance to date by general account (such as concrete, piping, and electrical; but no further breakdown). The Consortium would not, however, share the unit rates. Without the unit rates, the Bechtel estimate of the jobhours needed to complete the project was based on Bechtel's historical records and estimates of work activities observed during the assessment.

4. A new "assessment forecast" was created within the newly created Level 2 schedule based on the following:

   - Near Term Civil/Concrete – Forecast start and completion dates were identified based on walkdowns and assessments performed by Bechtel construction personnel.
   - Near Term Steel – Forecast start and completion dates were based on walkdowns and assessments performed by Bechtel construction personnel.
   - Above Ground Large Bore Piping by Area – Initially focused on placement of the 10% forecasted completion mark by area making sure to account for building predecessor logic and current forecast percent complete to-date.
   - Above Ground Small Bore Piping by Area – Set the 10% to 100% forecast dates based on Bechtel's historical relationship logic with above ground piping installation windows.
   - Cable Tray – Set the 10% to 100% forecast dates based on Bechtel's historical relationship logic with above ground piping installation windows.

- Above Ground Conduit – Set the 10% to 100% start and completion forecast dates based on Bechtel's historical relationship logic with tray installation windows.
- Cable – Set the 10% to 100% forecast dates based on Bechtel's historical relationship logic with above ground conduit and tray installation windows.
- Terminations – Set the 10% to 100% forecast based on Bechtel's historical relationship logic with cable installations windows.
- Major Equipment Erection Durations – Bechtel's historical median durations were used.

5. New assessment bulk installation curves were created with the to-go installation windows set based on Bechtel's median historical sustained rates.

6. The newly created assessment "family of curves" was compared to Bechtel's recommended model. The "family of curves" is a chart containing all of the major commodities scaled by percent complete. These commodities are then compared against each other in relationship of project percent of time. A properly sequenced project will represent itself in installation windows that follow a typical relationship. The installation windows were adjusted as necessary to account for differences as compared to Bechtel historicals.

7. Productivity factored hours were developed based on current performance and input from Bechtel construction personnel by major account (site work, civil, piping and electrical). The newly created unit installation rates were verified against a current, equivalently-sized, Bechtel project.

8. The commodity installation curves were converted into craft hours based on the assessed unit rates.

9. The assessed schedule and unit rate converted hours were used to create craft manpower curves by craft type and facility.

10. Each major facility was reviewed for peak craft loading. Schedule durations were extended where area saturation occurred.

11. Key craft (pipefitters and electricians) unit stagger curves were created for 9, 12, 18, and 24 month staggers between units and evaluated for "best fit" and "most achievable".

12. The assessment manpower curves were converted into percent complete curves. The planned percent complete per month values were compared to Bechtel historical references.

13. The Consortium's current startup schedule was reviewed. The heavily concentrated "turnover and checkout" duration was increased from 12 months to 18 months to account for the following concern in the turnover system waterfall:

    - 2015: 2 turnovers
    - 2016: 44 turnovers (cumulative: 46)
    - 2017: 475 turnovers - 86% of total (cumulative: 521 or 94% of the total BIPs)
    - 2018: 33 turnovers (cumulative: 554)
    - 2019: 1 turnover (cumulative: 555)

    The increased duration will allow for a more balanced split between years which ultimately will create a more achievable schedule.

14. The 90% complete dates of each commodity to fuel load durations were set based on Bechtel's historical range data. This will ensure sufficient time to complete startup activities.
15. The assessment schedule logic for the "energization" activity was tied to 65% complete of terminations and the cold hydro activity was tied to 100% complete of nuclear island large bore pipe completion.

16. As a secondary verification method, Bechtel's historical durations were compared against currently forecasted durations driven by logic for the following areas:

    - Energization to start of cold hydro
    - Energization to start of integrated flush
    - Energization to start of hot functional testing
    - Start of cold hydro to fuel load
    - Fuel load to commercial operation date

17. Reconciliations for sustained rates by area, startup durations by unit, manpower peaks by craft type, percent complete by unit, and overall project duration from first concrete to commercial operation were developed.

18. A limited schedule probability assessment was performed using the Primavera Risk Analysis software. This probability assessment was used to identify the contingency value needed to increase the probability of outcome to the 75th **percentile level.**

- Because of time limitations, the probability assessment was only performed on the critical path and the top 4 near critical paths.
- A typical 1,000 iteration Monte Carlo approach was used.
- Minimum/maximum windows were identified from Bechtel historicals and input from senior construction personnel on the assessment team.
- Minimum/maximum historical bulk installation rates were used as a secondary verification method.
- Only preferential logic was considered.
- Identification of required contingency was for assessment purposes only.

A more robust probability assessment approach would be needed before finalizing any changes to the project baseline target schedule.

3. Bases and Assumptions

The primary bases and assumptions for the schedule analysis are identified below.

1. Bechtel's historical reference data includes 21 completed nuclear units and four new reactor projects currently in the planning phase. (It is noted that past nuclear power plants were constructed in accordance with 10 CFR 50 construction permits and not 10 CFR 52 combined licenses.)

2. Turbine generator erection duration is based on Bechtel's average historical installation durations.

3. All activities are worked on a 48 hour work week. A second shift is assumed at 20% of overall directs.

4. During the current civil phase of the work, there are significant productivity impacts resulting from engineering and procurement issues. The impacts during the bulk installation of piping and electrical commodities are not expected to be as extensive; however, some impacts due to future engineering and procurement issues were included when developing the median case schedule.

5. Sufficient quantities and quality of craft are available to support project staffing needs up to a maximum of 3,700 craft.

6. Engineering changes will not affect material availability to support construction installation dates.

7. All modules and materials will be delivered to support construction installation dates.

8. Preventative maintenance will keep equipment operationally ready for installation.

9. The schedule has been developed to avoid craft area saturation levels by building and elevation.

10. The typical historical bulk installation sequence has been altered to account for the following:

    - The north side of the auxiliary building is exclusively electrical commodities which allows for an almost parallel start with piping commodities which are primarily located in the south half.

    - The north side of the annex building is 80% electrical commodities which allows for an almost parallel start with piping commodities. The south side of the building is mixed and will follow the typical bulk installation sequence.

11. The Consortium's bulk commodity estimates by building were used for concrete, steel, large bore piping, small bore piping, cable tray, conduit, and cable with one exception. The Consortium's estimates for conduit and large bore piping in the annex building were not used and are considered unreliable. Schedule extensions to account for these high annex building quantities were not included. The Consortium is in the process of validating these quantities.

12. The Consortium's recovery schedule for shield building installation was being finalized during the assessment and was not available for review. Because of the predicted schedule duration increases in other areas of the integrated schedule, it is assumed that the shield building will not remain on the critical path.

13. The assembly and issuance of work packages will support the construction schedule to ensure work fronts are not limited.

14. There are no construction equipment limitations.

15. The indirect-to-direct craft ratio is reduced significantly from its current ratio of 1.3.

16. ITAAC closures do not impact the critical path.

17. Licensing issues (e.g., the need to obtain prior NRC approval of license amendments) do not limit work fronts or enter the critical path.

18. Cyber security issues do not affect the critical path.

19. Simulator and operator qualifications do not affect the critical path.

4. Conclusions and Results

Based on Bechtel's assessment, the Consortium's forecasts for schedule durations, productivity, forecasted manpower peaks, and percent complete do not have a firm basis and the current schedule is at risk.

The results of the schedule analysis are identified below:

- The to-go scope quantities, installation rates, productivity, and staffing levels all point to project completion later than the current forecast. Bechtel's assessment, based on certain assumptions, is that the Unit 2 and Unit 3 commercial operation dates (CODs) will extend as follows:

Impacts on Commercial Operation Dates		
	Unit 2	Unit 3
Current COD	June 2019	June 2020
Adjustment	18 to 26 months	24 to 36 months
New COD	Dec 2020 to Aug 2021	June 2022 to June 2023

- The critical path will change from shield building installation to a more typical critical path for power plant projects that includes bulk commodity installations through overall project checkout and testing/startup.
- Increasing schedule confidence to 75% increases the schedule duration by 8 months (included in the 26 months for Unit 2 and the 36 months for Unit 3).
- The stagger between the Units 2 & 3 commercial operation dates is extended by 6 months (from the current 12 months apart to a recommended 18 months apart).
- The peak monthly construction percent complete is reduced from 3.1% to a lesser, more realistic, percentage.
- The primary checkout window is extended by 6 months (from the current 12 months per unit to a recommended 18 months per unit).
- The total craft population is increased by 25% to approximately 3,700. At peak, 850 pipefitters and 730 electricians will be required.
- The bulk installation windows are increased by a minimum of 30%.

Figure 1 provides the assessment Level 1 summary schedule. Both the Consortium and the Bechtel assessment schedule activities are shown for comparison. (Figures are located starting on the next page.)

Figures 2 through 5 provide the mid forecast family of curves for Unit 2 total, nuclear island, turbine island, and balance of plant, respectively.

Figure 6 shows the Unit 2 craft manpower and percent complete curves. Figure 7 shows the Unit 2 head count by craft (not including subcontract hours). Figure 8 shows the Unit 3 craft manpower and percent complete curves.

Figure 9 shows the Unit 2 and 3 direct and indirect manpower curves for 12, 18, and 24 month staggers between units. Figure 10 shows the Unit 2 and 3 percent complete curves for 12, 18, and 24 month staggers between units.

Figure 1. V.C. Summer Units 2 & 3 Schedule Assessment
Summary Schedule

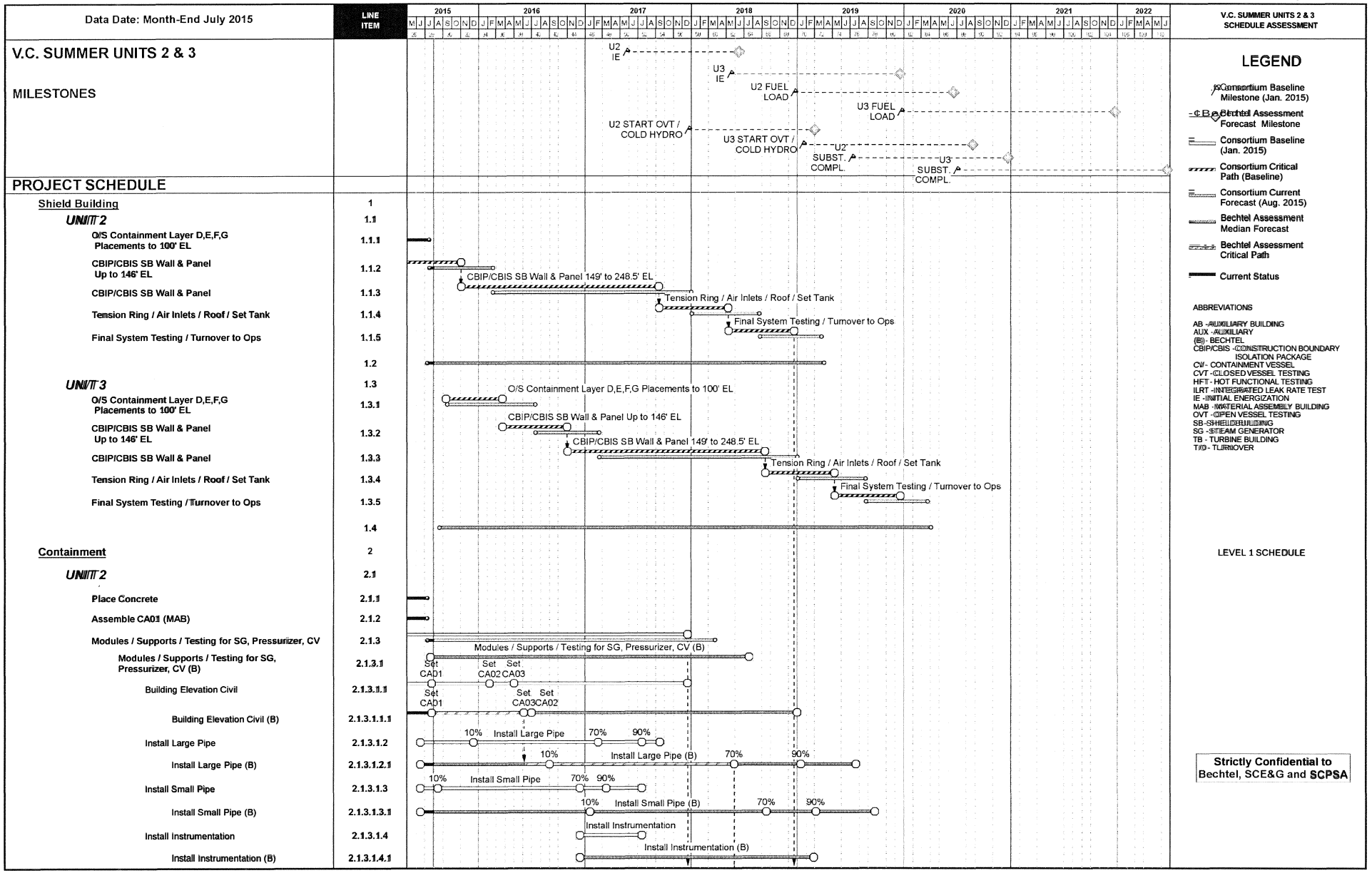

Figure 1. V.C. Summer Units 2 & 3 Schedule Assessment
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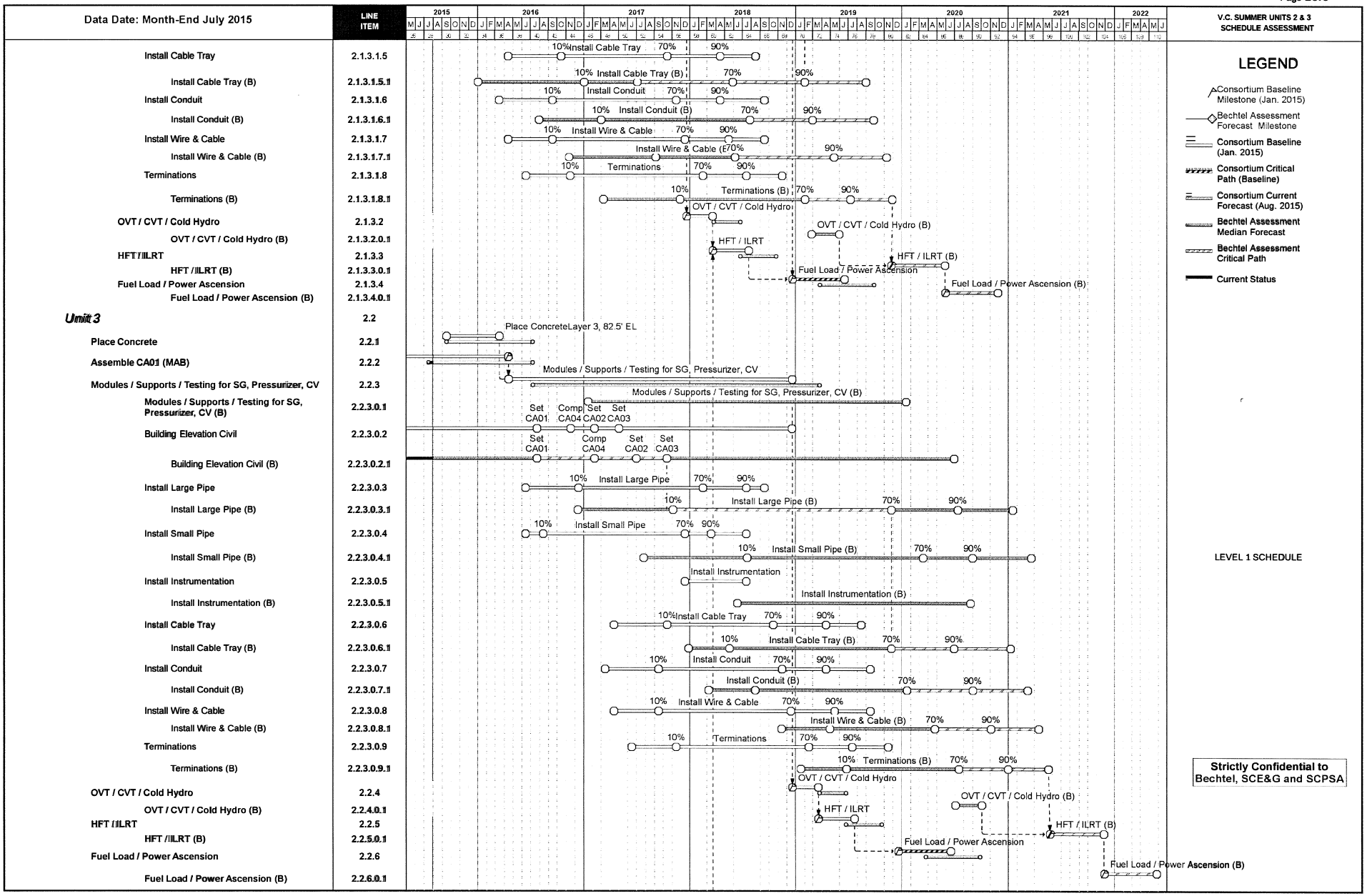
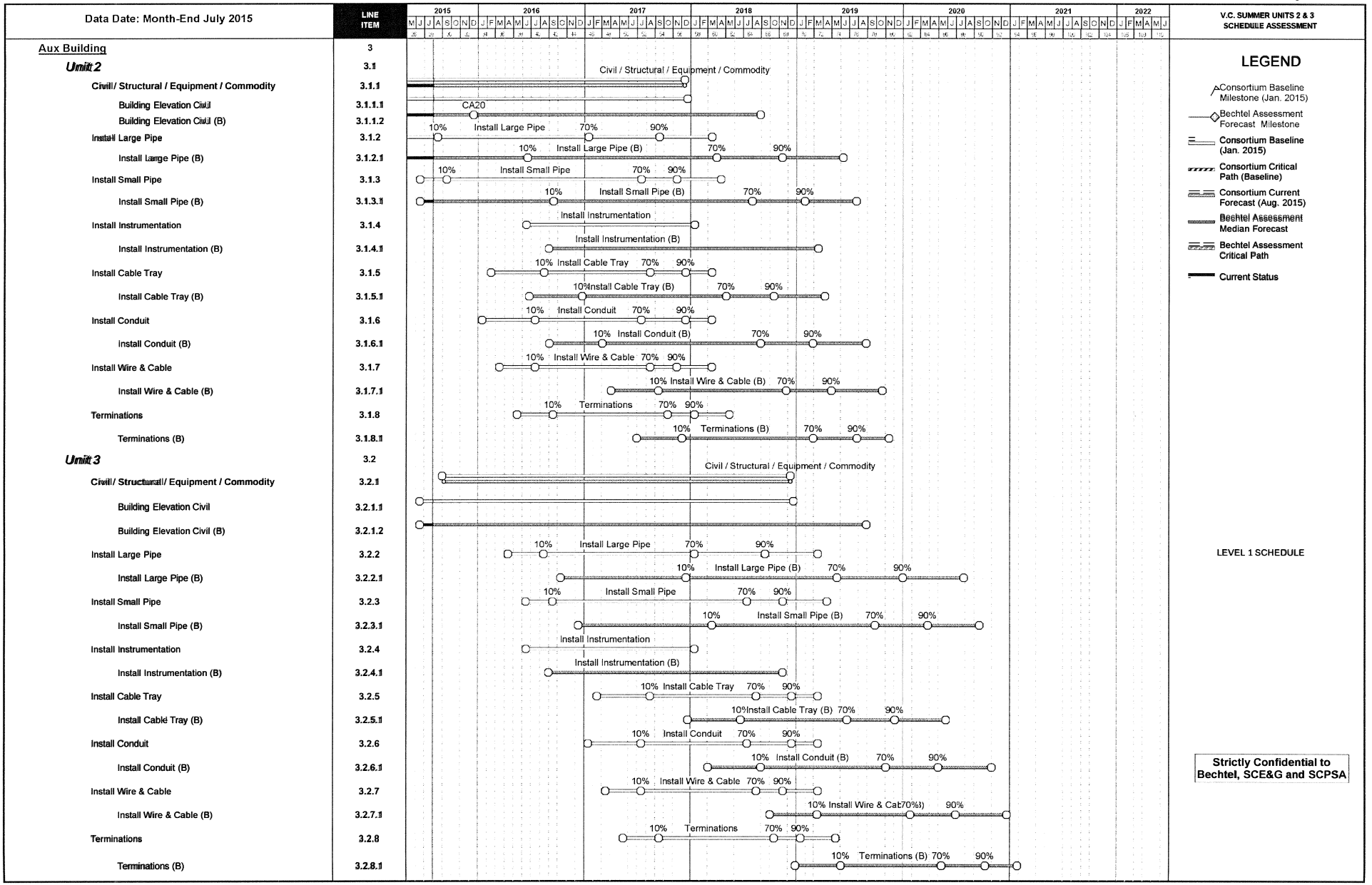


Figure 1. V.C. Summer Units 2 & 3 Schedule Assessment
Summary Schedule



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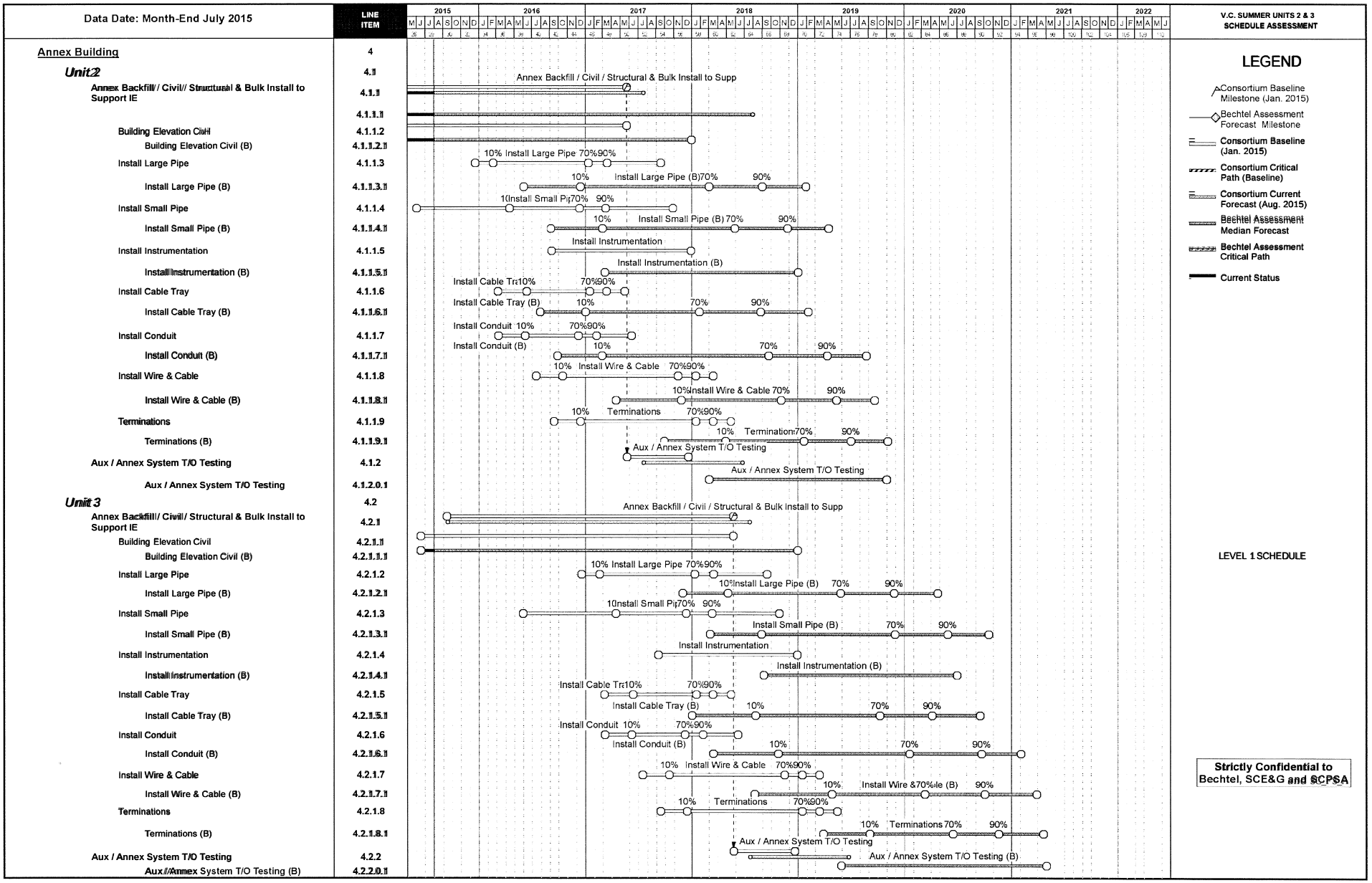

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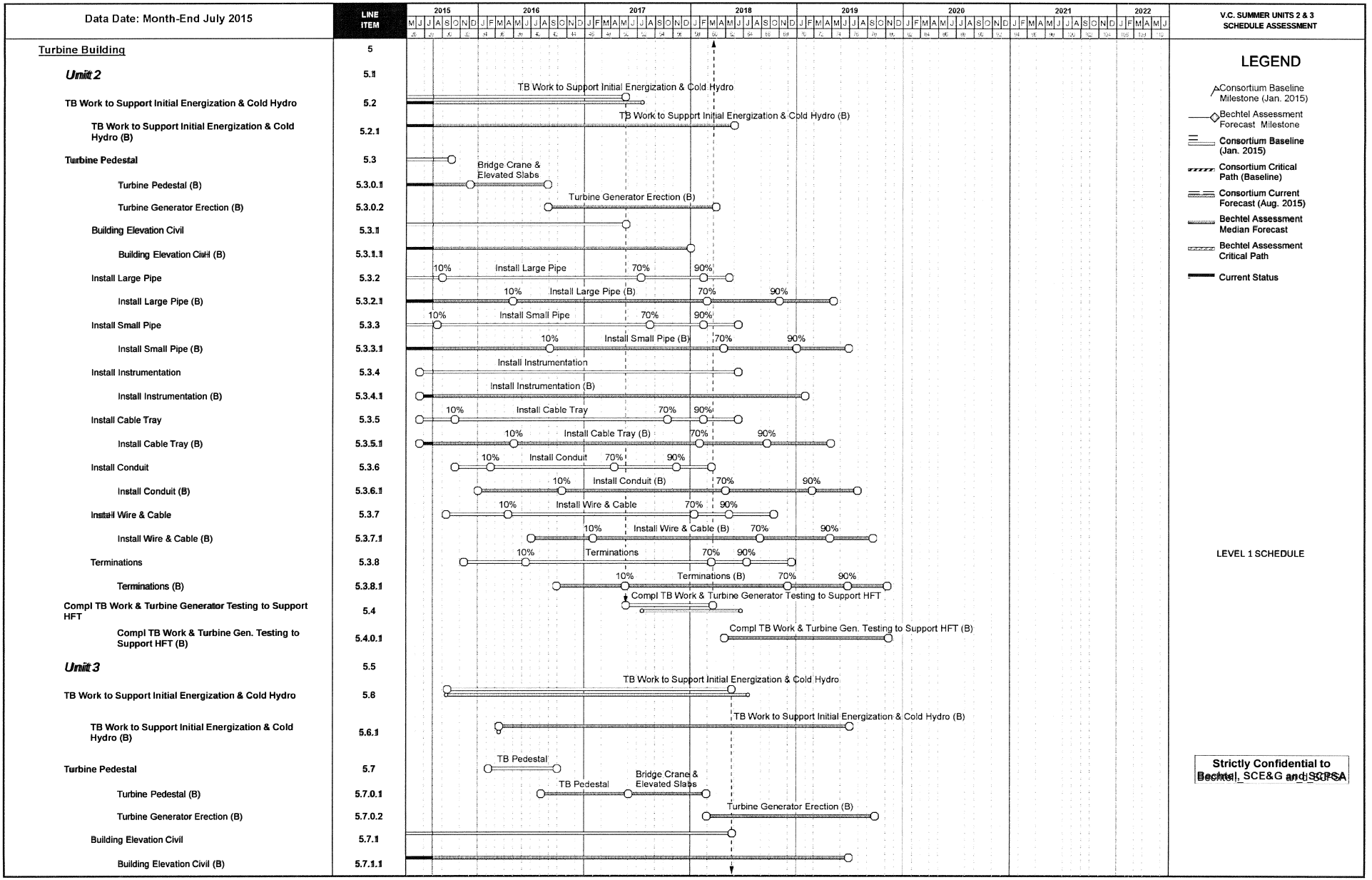

Figure 1. V.C Summer Units 2 & 3 Schedule Assessment
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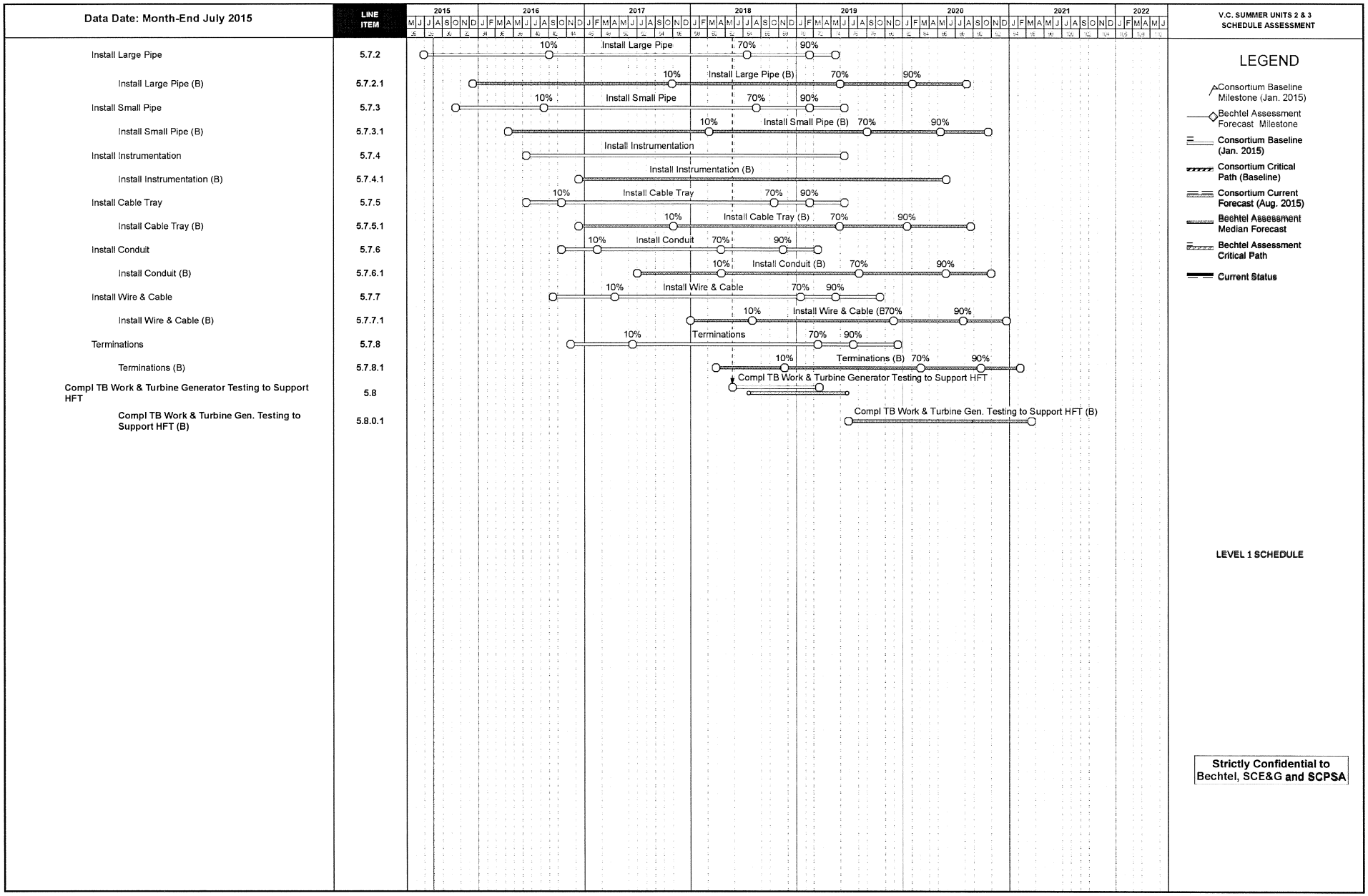

Figure 2. Unit 2 Midpoint Forecast- Total Family of Curves

Sheet 1 of 1

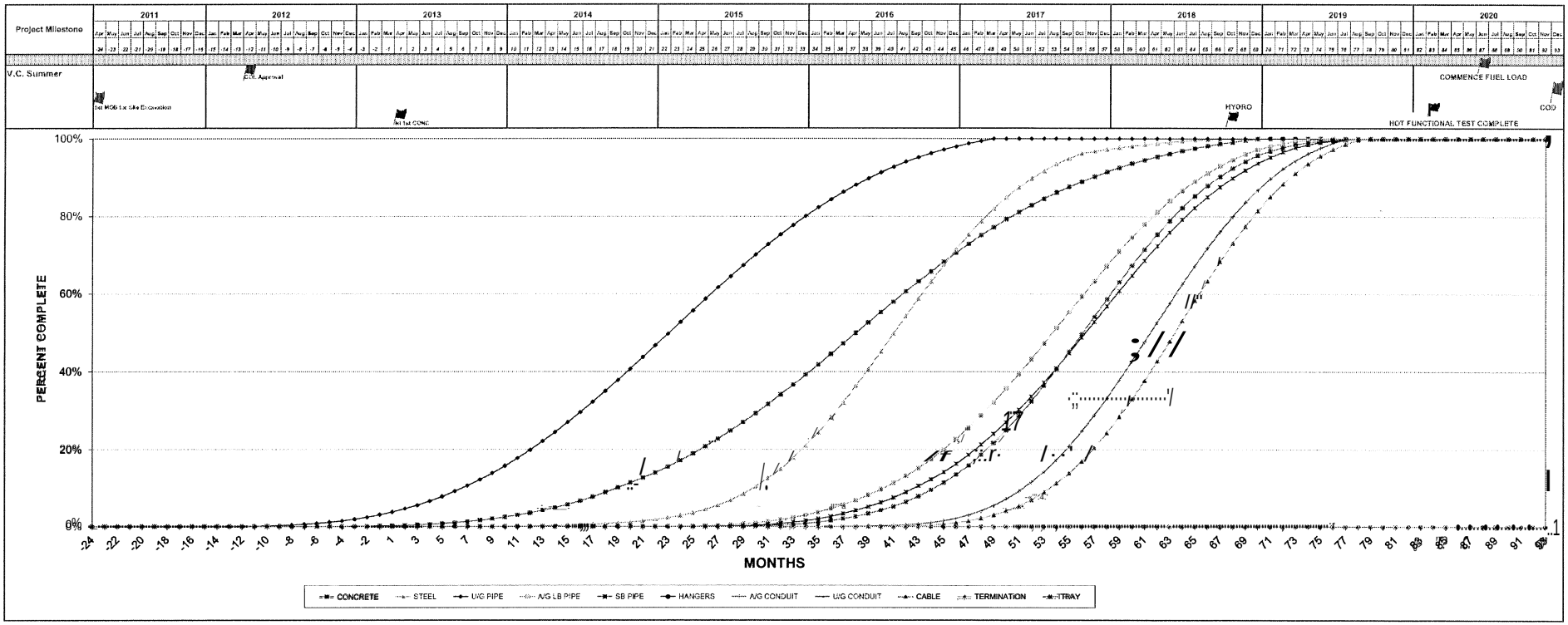

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Figure 3. Unit 2 Midpoint Forecast - Nuclear Island Family of Curves

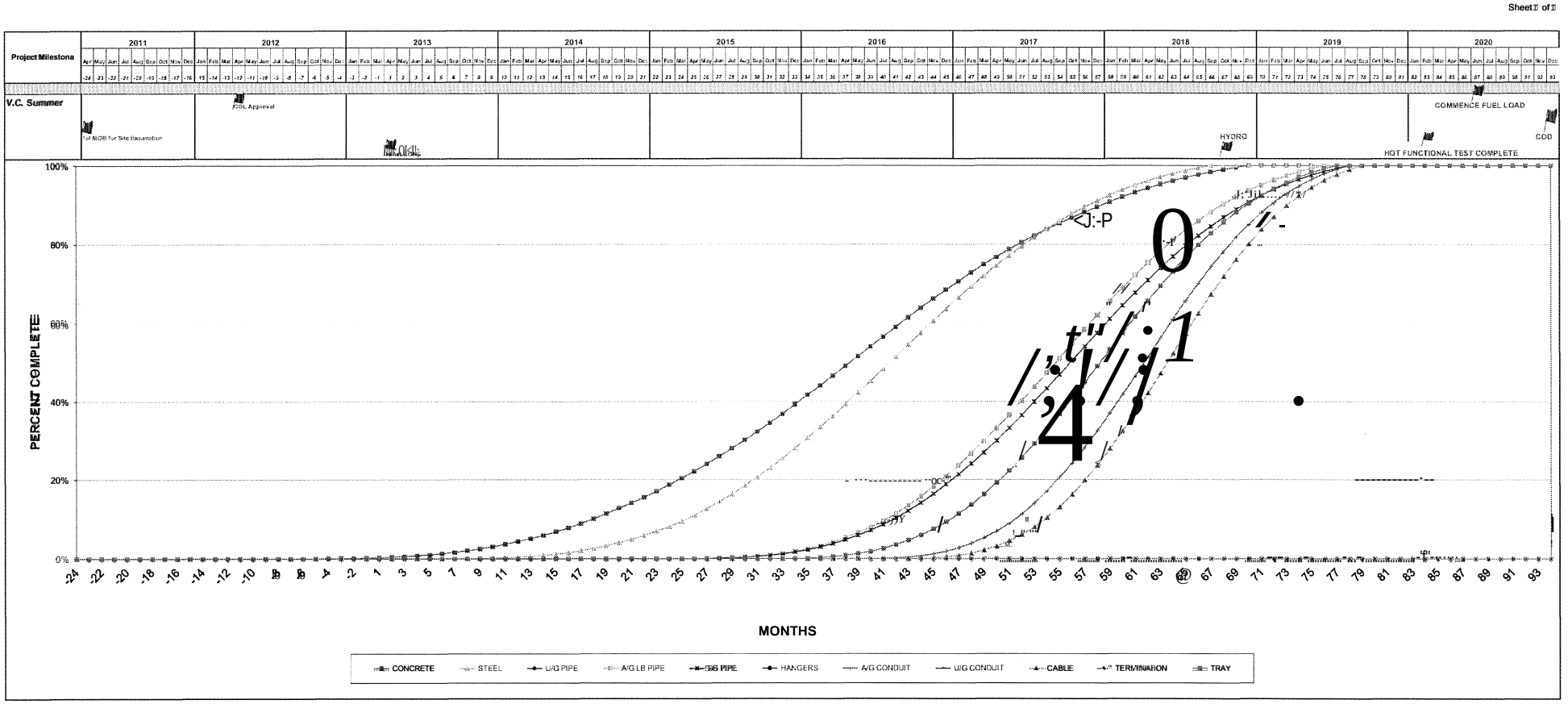

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Figure 4. Unit 2 Midpoint Forecast - Turbine **Island Family of Curves**

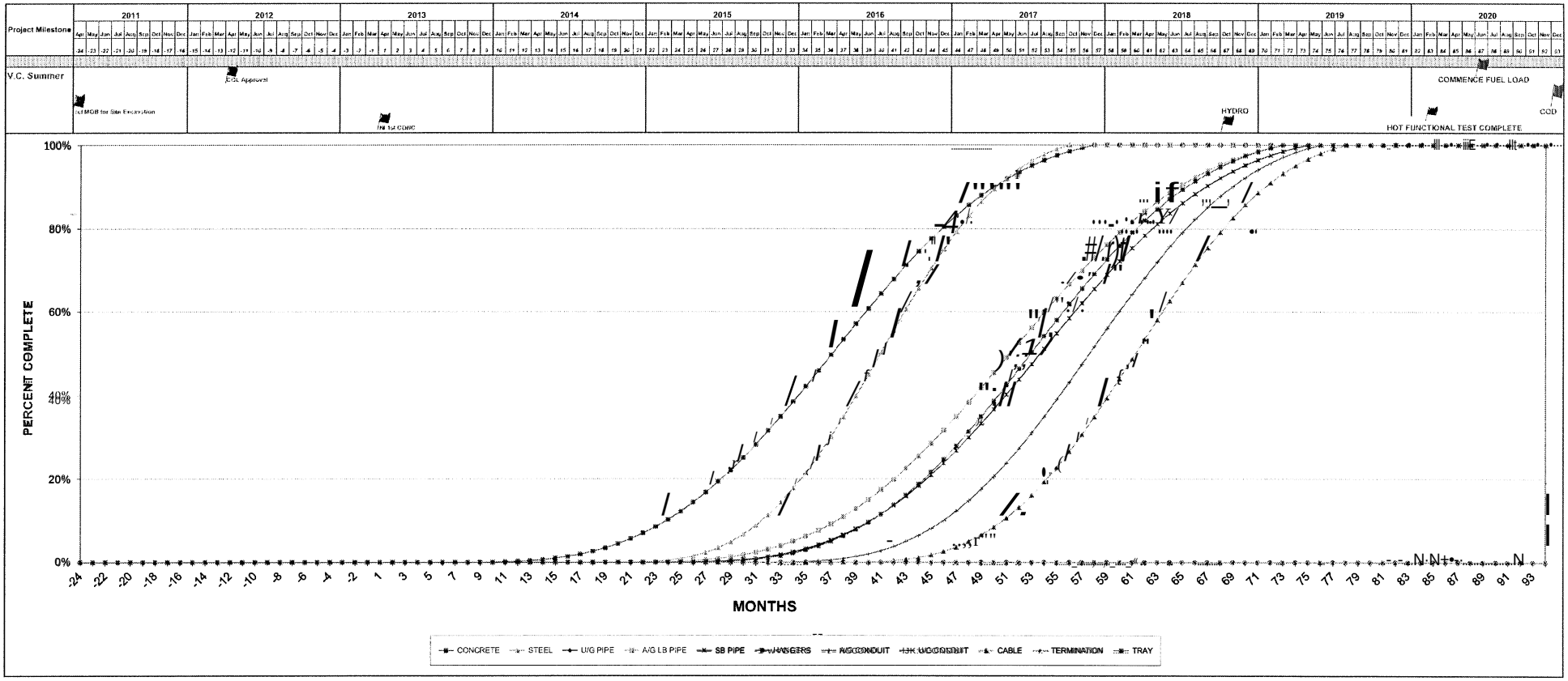

Figure 5. Unit 2 Midpoint Forecast - Balance of Plant Family of Curves

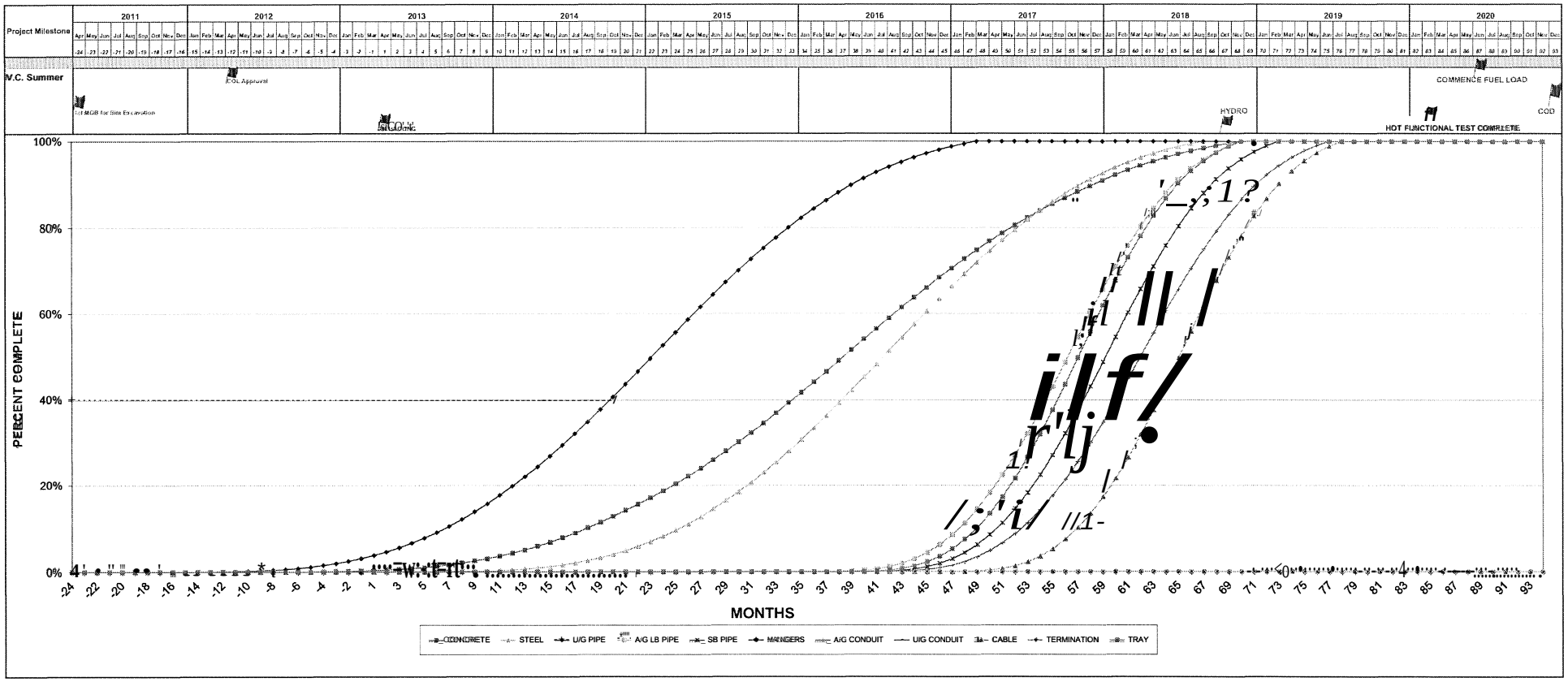

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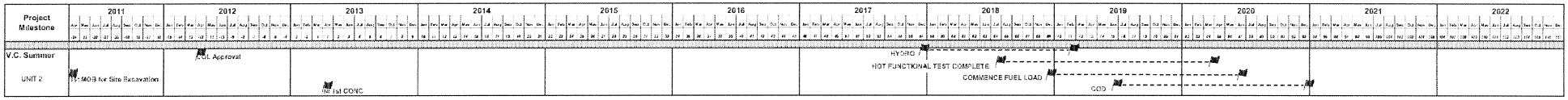
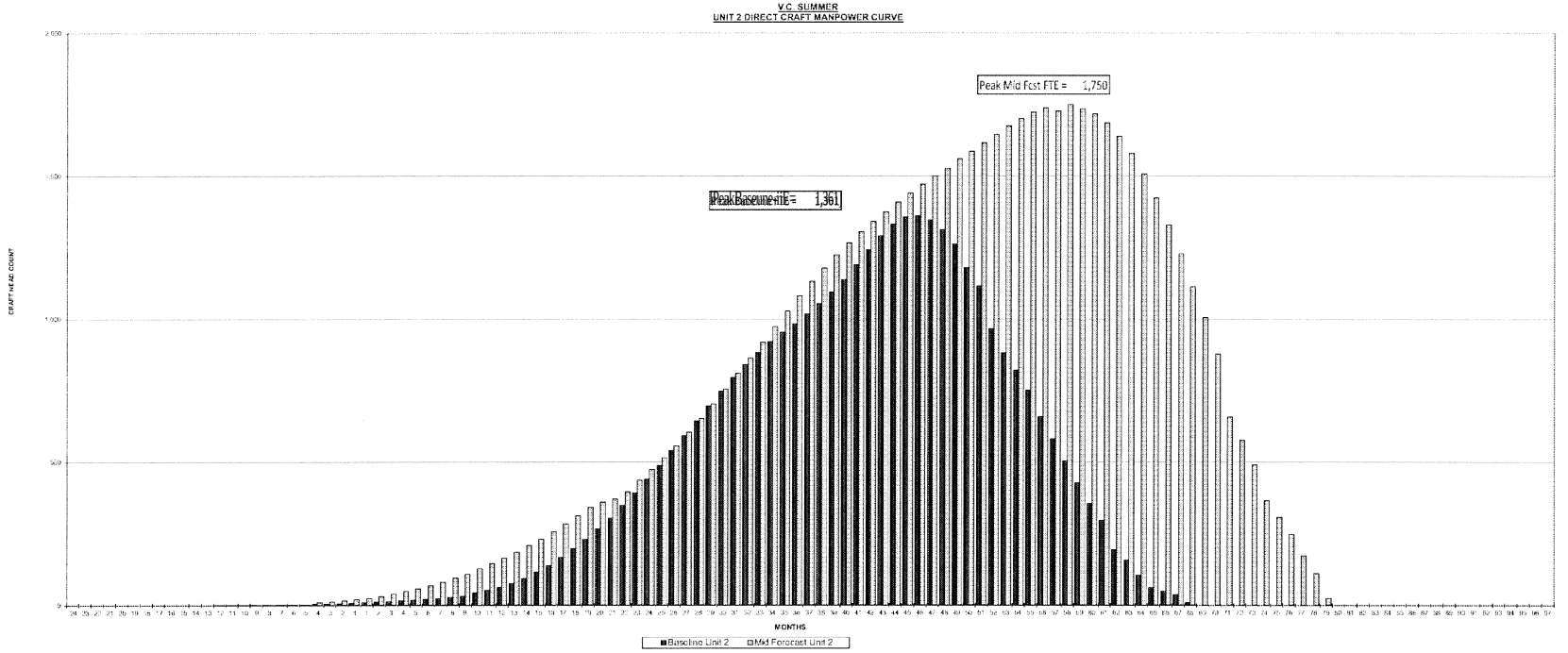
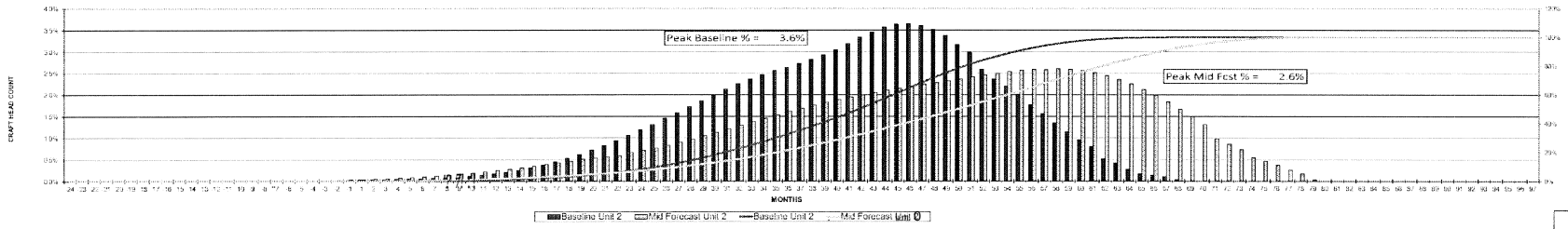
Figure 6. Unit 2 Direct Craft Manpower Curve and Percent Complete Curve







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Confidential Treatment Requested by Santee Cooper

ORS_00450299

Figure 7. Unit 2 Headcount by Craft (Does not Incl S/C Hrs)

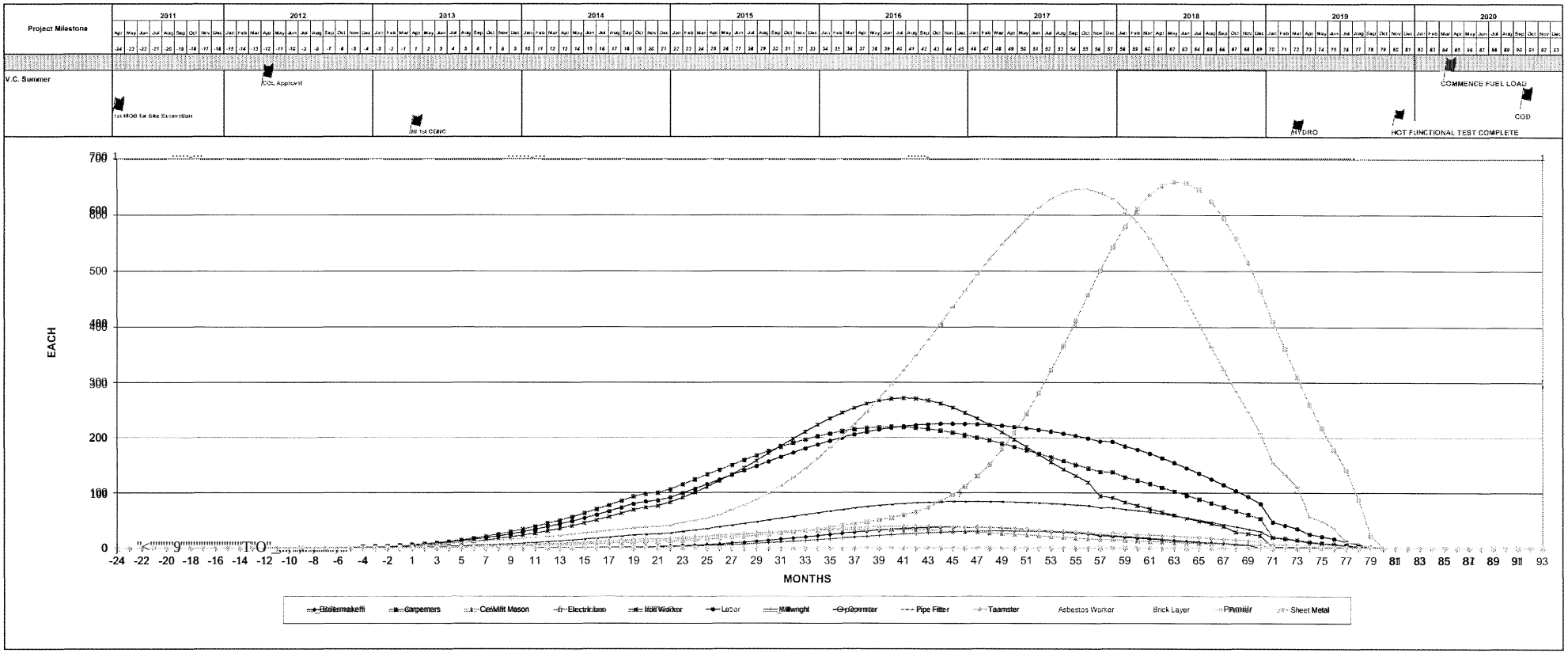
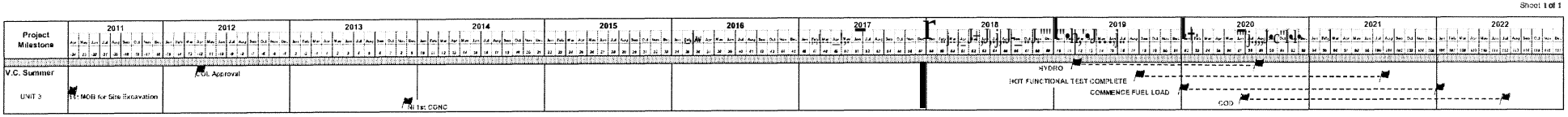
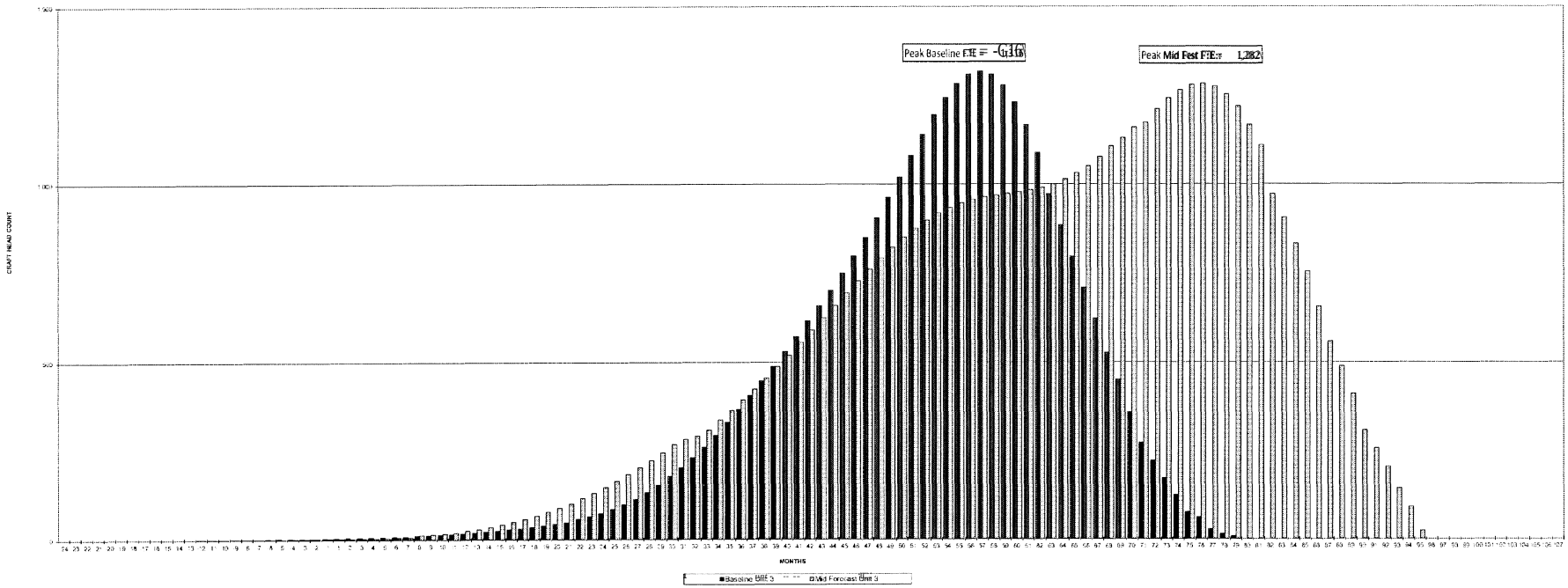


Figure 8. Unit 3 Direct Craft Manpower Curve and Percent Complete Curve



V.C. SUMMER
UNIT 3 DIRECT CRAFT MANPOWER CURVE



PERCENT COMPLETE CURVE

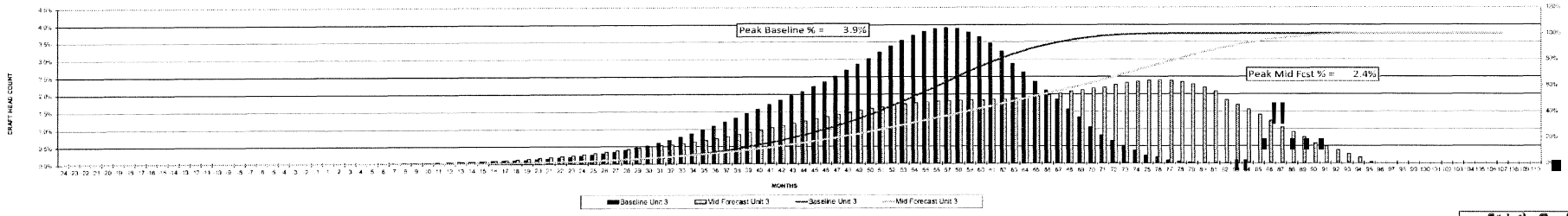
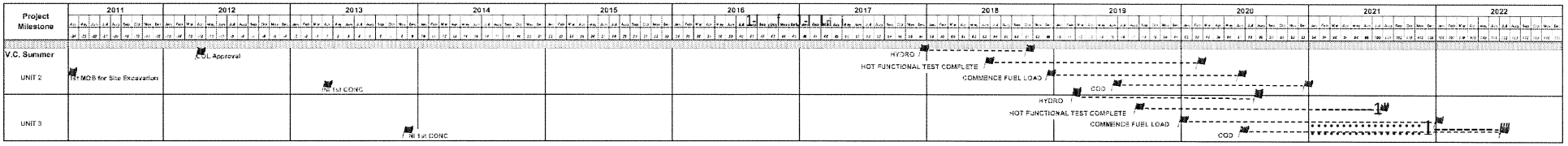
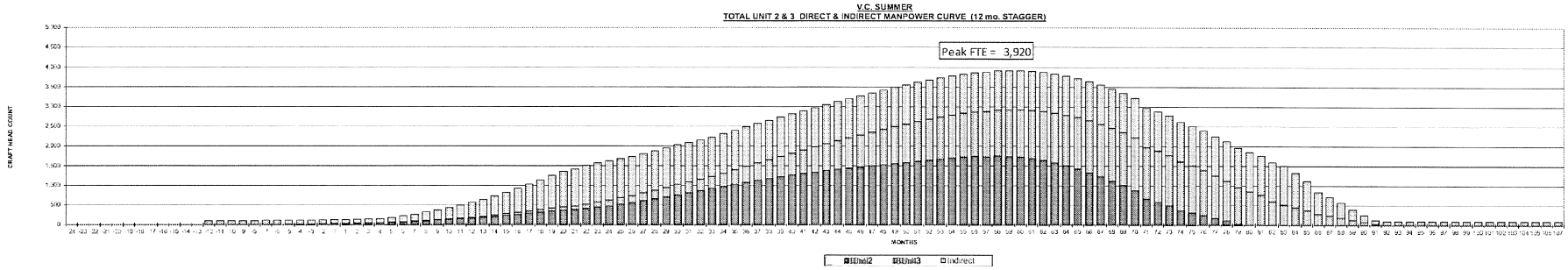
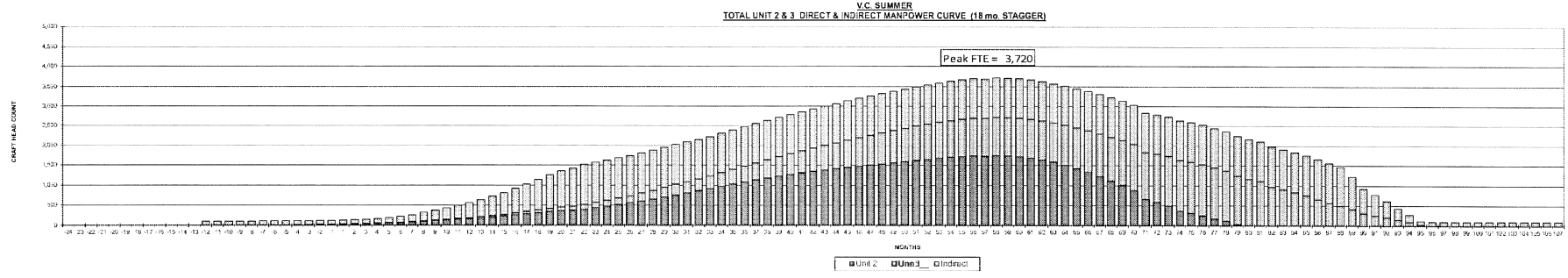


Figure 9. Total Unit 2 3 Direct Indirect Manpower Curves
(12, 18, 24 Month Staggers)

Sheet 1 of 1







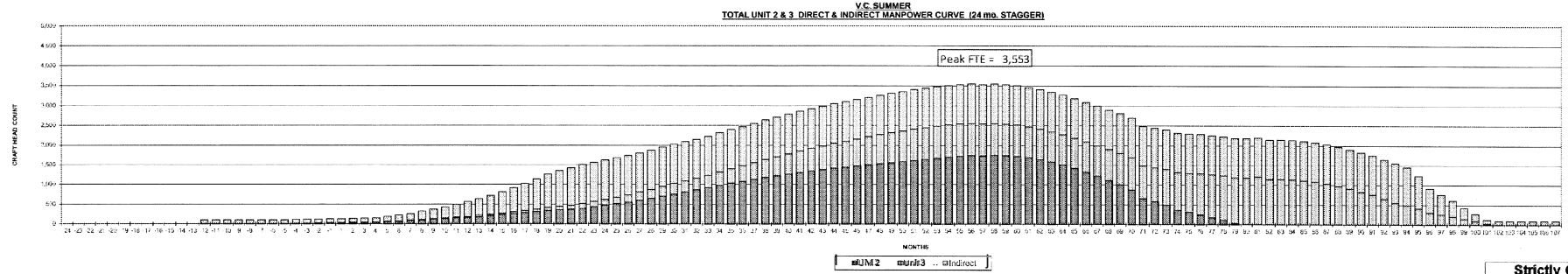


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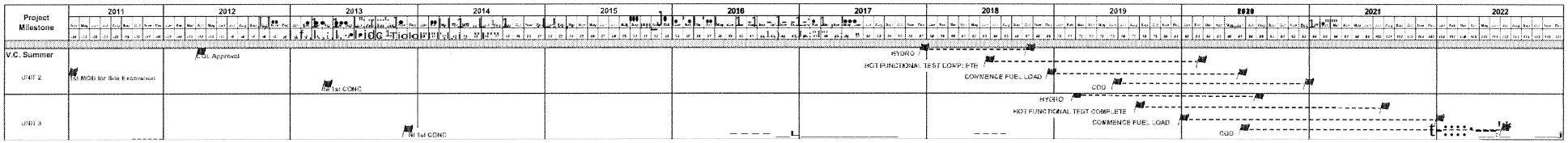
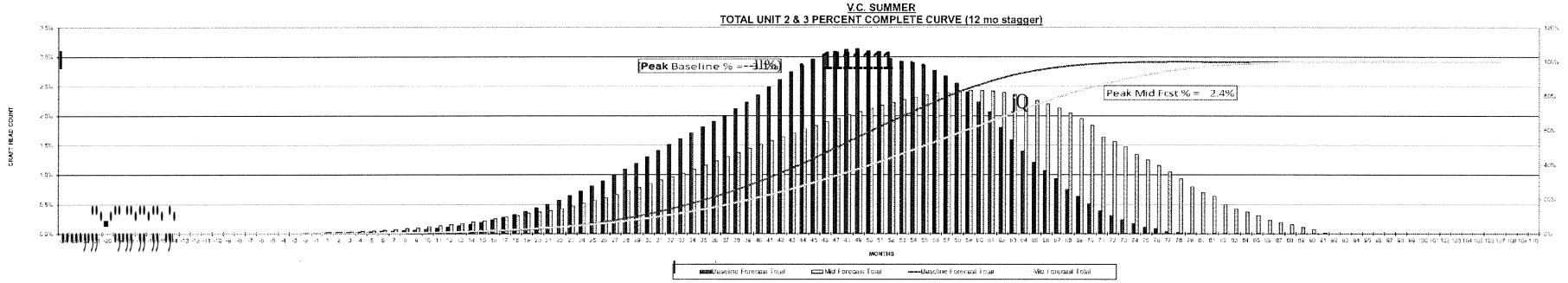
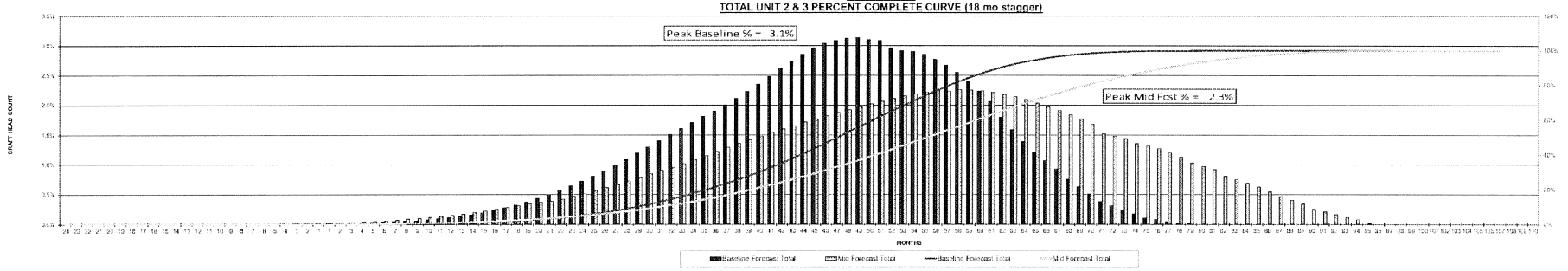
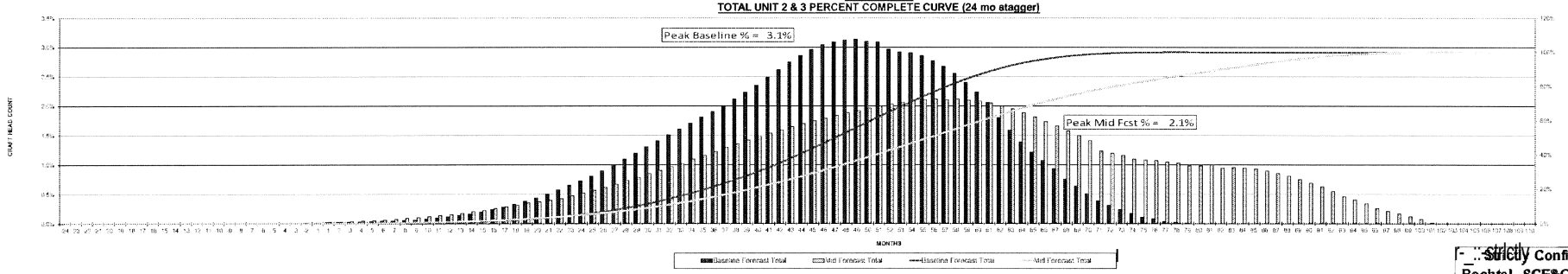
Figure 10. Total Unit 2 3 Percent Complete Curves
(12, 18, 24 Month Staggers)

Sheet 1 of 1









To: MARSH, KEVIN B[KMARSH@scana.com]
Cc: LINDSAY, RONALD[RONALD.LINDSAY@scana.com]
From: BYNUM, ALVIS J JR
Sent: Mon 2/8/2016 1:09:02 PM
Subject: FW: Bechtel
Final2-5-16 VC Summer Units 2 & 3 - Project Assessment Report.pdf

Kevin- we are still arguing that this is attorney-client privileged. That means that you shouldn't forward it. If someone else needs to see it, let Ron or I send it to them. Al

From: Wenick, George [mailto:gdwenick@smithcurrie.com]
Sent: Friday, February 05, 2016 4:33 PM
To: LINDSAY, RONALD <RONALD.LINDSAY@scana.com>; Baxley, Mike (mike.baxley@santeecooper.com) <mike.baxley@santeecooper.com>; Pelcher, Steve (stephen.pelcher@santeecooper.com) <stephen.pelcher@santeecooper.com>; BYNUM, ALVIS J JR <ABYNUM@scana.com>
Subject: Bechtel

***This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source.

Gentlemen,

Attached is Bechtel's final" Summer Units 2 & 3– Project Assessment Report." Please distribute as you see fit.

George

EXHIBIT 11
WITNESS
DATE: 10/26/18
K. KIDWELL, RMR, CRR, CRC

BECHTEL REPORT ACTION PLAN

SCE&G CONCERNS

1. **What disclosure to make to ORS**–Marion Cherry is aware of internal SCE&G emails and verbal communications revealing that ORS is aware that a project assessment was being done, and recent inquiries have from ORS to SCE&G checking on status of assessment report. On 02/10/16, Mike Baxley asked Al Bynum how SCE&G legal intended to handle this disclosure and received the answer that Al did not know, would have to check on this, and would be back in touch.
2. **What bond disclosures are required**–This same concern applies to Santee Cooper, disclosures should be similar.
3. **What mitigation effort is required to defend potential shareholder suit**–Now that SCE&G is specifically aware of problems raised in report, failure to act may result in O&D liability.

SANTEE COOPER PROPOSAL FOR USE OF REPORT

1. We will continue to cooperate, within the law, with SCE&G's efforts to avoid disclosure on the condition that SCE&G will agree to use the document as a template for project administration changes to be jointly decided, but most include:
   (a) The hiring of an EPC nuclear construction-experienced owners' engineer with authority to manage the project, Bechtel is not excluded from consideration;
   (b) An internal SCE&G project management change that will increase managerial staff and be led by a nuclear construction-experienced individual who is a direct report to Kevin Marsh whose sole responsibility is managing this construction project;
   (c) The Bechtel Report will be reviewed jointly by SCE&G and Santee Cooper leadership, section by section, together with Bechtel analysts, to determine specifically what administrative and operations changes will be made going forward with the project, effective immediately; and,
   (d) Each change will include an objective metric to determine compliance and success.

SANTEE COOPER ACTION STEPS

1. First step, determine from Al Bynum what ORS disclosures are contemplated, this will substantially drive all other disclosures.
2. No later than February 19 schedule a meeting of attorneys in Columbia, with George Wenick present, to develop a proposal for disclosures and distribution of the Report document, this meeting to produce a recommendation for meeting scheduled in Step 3 below.
3. No later than February 26, schedule an all day meeting in Columbia with business and legal teams and Bechtel analysts to review the report section by section to produce a plan for operations and administration for the project. This meeting will also consider the proposed disclosure plan prepared by the legal teams.
4. Prior to February 26 meeting, to avoid surprise, Lonnie will telephone Kevin with specifics of Santee Cooper's position with respect to management changes at project.